# Progress Report Link Light Rail Program



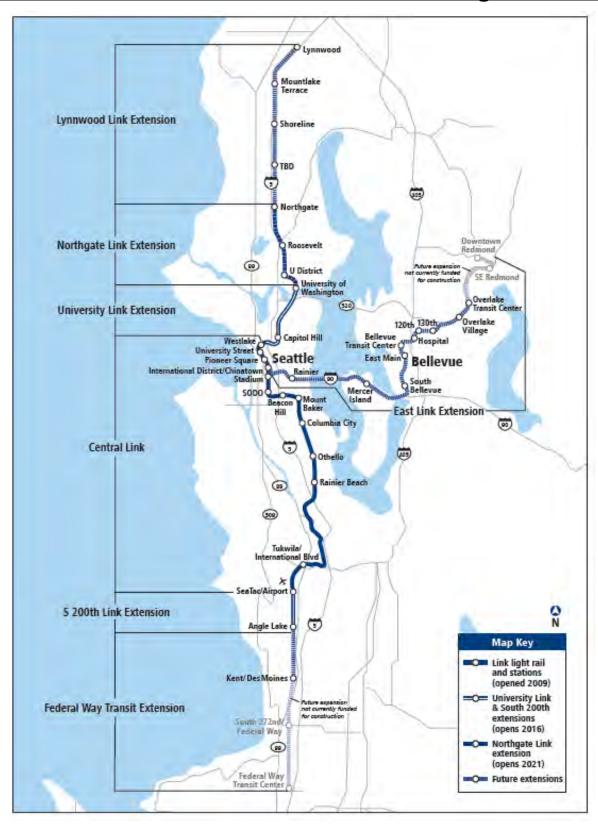
**Overview of the Capitol Hill Station site** 

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Map of Sound Transit's current and future light rail projects.

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# Link Light Rail Program Overview



## **Projects**

**University Link Extension:** The University Link Extension work program with \$1.76 billion capital budget was approved by the Board in July 2008. The 3.15-mile light rail segment is located entirely underground with tunnels traveling from Pine Street, under the I-5 freeway to an underground station at Capitol Hill, continuing north beneath SR 520 and the Lake Washington Ship Canal to an underground station on the University of Washington campus, near Husky Stadium.

**Northgate Link Extension:** The University of Washington Station (UWS) to Northgate project is a 4.3-mile extension of light rail from the UWS north under campus via twin-bored tunnels to an underground station at NE 45th Street continuing to an underground station at NE 65th Street and via tunnel, retained cut and elevated sections to Northgate. The project is in Final Design; NTP for Early Work at station locations was given in August 2012.

**Lynnwood Link Extension:** This project entails the planning, design and construction of an extension of Northgate Link from Northgate to Lynnwood in Snohomish County with additional service in the cities of Shoreline and Mountlake Terrace. The development of the draft environmental impact statement (DEIS) and conceptual engineering of the DEIS alternatives started in January 2012.

**East Link Extension:** East Link Extension expands light rail to East King County via I-90 from Downtown Seattle to the Overlake Transit Center area of Redmond, with stations serving Rainier Avenue/I-90, Mercer Island, South Bellevue, Downtown Bellevue, Overlake Hospital, the Bel-Red corridor, Overlake Village and the Overlake Transit Center. Revenue service to the Overlake Transit Center is forecast for early 2023 with a tunnel route in Downtown Bellevue.

**Initial Segment**: Completed 13.9-mile light rail line between downtown Seattle and South 154th Street in the City of Tukwila. Revenue service began on July 18, 2009.

**Airport Link**: Completed 1.7-mile extension of the Initial Segment to Sea-Tac International Airport. Revenue service began on December 19, 2009.

**South 200th Link Extension:** S. 200th Link Extension consists of a 1.6-mile extension of the light rail from the SeaTac/Airport Station to an elevated station at South 200th Street. Preliminary Engineering and the Environmental Impact Statement have been completed and a Record of Decision has been issued for this segment. The Project is being developed through a design/build (DB) delivery strategy. NTP was given to the DB contractor in October 2012.

**Federal Way Transit Extension:** Sound Transit has initiated studies to identify and evaluate routing and station location requirements to inform conceptual engineering and environmental review for the extension of light rail to the Federal Way Transit Center; with preliminary engineering to be completed on the segment extending from S. 200<sup>th</sup> St. to Kent/Des Moines in the vicinity of Highline Community College. Planning and preliminary engineering for this extension is scheduled to be completed by late 2015; the proposed budget for this effort is \$41.8 million.

**Tacoma Link Expansion:** In partnership with the City of Tacoma and Pierce Transit, Sound Transit is studying the potential of expanding Tacoma Link in the context of the City and Pierce Transit service and capital plans.

**Link Operations and Maintenance Satellite Facility:** Sound Transit is reviewing and evaluating current and future light rail storage and maintenance requirements to support the development, design, and construction of a future light rail operations and maintenance facility for proposed system expansion.

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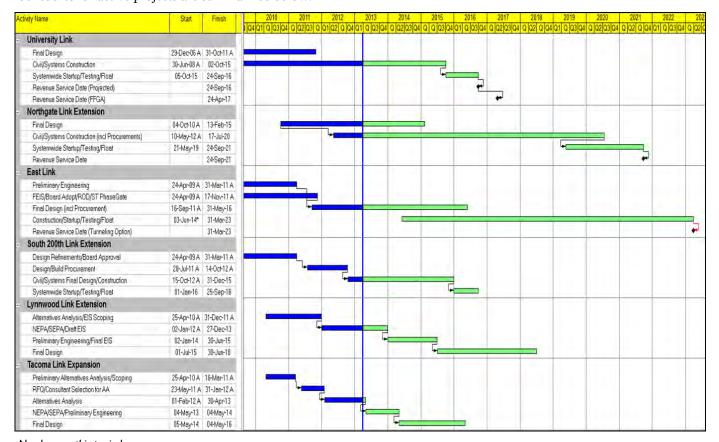
### **Active Program Budget**

Project	Adopted Budget	Committed to Date	Incurred to Date
University Link <sup>(3)</sup>	\$1,947.7	\$1,560.1	\$1,048.7
Northgate Link Extension <sup>(2)</sup>	\$2,131.4	\$279.7	\$144.8
Lynnwood Link Extension <sup>(1)</sup>	\$57.I	\$21.9	\$15.9
East Link <sup>(2)</sup>	\$756.8	\$234.1	\$106.3
Initial Segment <sup>(4)</sup>	\$2,433.7	\$2,323.7	\$2,296.3
Airport Link <sup>(4)</sup>	\$263.1	\$263.3	\$261.2
S. 200th Link Extension <sup>(2)</sup>	\$383.2	\$237.5	\$51.9
Federal Way Transit Extension <sup>(1,5)</sup>	\$41.8	\$3.8	2.5.
Tacoma Link Expansion (1,5)	\$5.0	\$1.3	\$0.9
Link Operations & Maintenance Satellite Facility <sup>(1,5)</sup>	\$9.4	\$2.6	\$2.3
Total	\$8,029.3	\$4,928.0	\$3,928.3

Table figures in millions (1) Preliminary Engineering Phase; (2) Final Design Phase; (3) Construction Phase; (4) In Service -No more updates, (5) Updated Quarterly.

## **Program Schedule**

Schedules for active projects are summarized below.



No changes this period.

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## **Project Summary**

**Limits**: 3.15-mile extension of the Initial Segment

light rail transit (LRT) system from the Pine Street Stub Tunnel (PSST) in downtown Seattle to University of Washington (UW) cam-

pus near Husky Stadium.

Tunnels: Two twin bored tunnels. Two contract seg-

ments: U220 starts at Husky Stadium, continues beneath SR 520 and the Lake Washington Ship Canal and south to the Capitol Hill underground station. U230 commences at Capitol Hill Station and proceeds south un-

der the I-5 freeway to the PSST.

**Stations**: 2 underground center platform stations –

Capitol Hill (U240) and University of Washington (U250). U240 is approximately 65' underground with three station entrances. U250 is about 100' below ground, with three station entrances and connections to the UW

campus by a pedestrian bridge.

**System**: 27 LRV; direct fixation tracks, signals, trac-

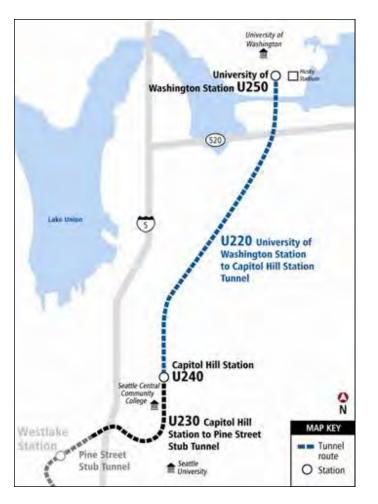
tion electrification, and SCADA communica-

tions

**Budget**: \$1.948 billion including finance cost (capital

subtotal of \$1.756 billion)

**Schedule**: Project completion in September 2016



## **Key Project Issues**

- U220's Cross Passage #17 ground water issue is believed to have been successfully mitigated. There has been impact to follow-on contractors' tunnel finishes scope. Impacts are predominantly related to inefficiency in executing those finishing work. Monitoring of CP#17 will continue through testing and there may a need to require longer term monitoring as well.
- U830 Systems access will be a continuous issue as there are no tunnel portals in the U-Link project. All access coordination are crucial and will be carefully orchestrated between Civil and System contractors. Coordination will be closely monitored. Both station contractors and the system contractors seem to be collaborating well at the moment.
- At U250 University of Washington Station: UW's Husky Stadium renovation and the Montlake Triangle projects add logistic complexities in the geographical vicinity of the project. Coordination meetings between contractors are better than expected. With U830 mobilizing and the shrinkage of the construction site footprint per our UW agreement, U250 will require more coordination
- The Maintenance of Way Building was recently approved by the FTA to be incorporated to the U-Link project as part of the Operations and Maintenance Facilities site. This scope is to be executed through a design build project delivery method and is to be commissioned prior to the U-Link Pre-Revenue service date of February 2016. This tight window schedule will be closely monitored.

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## **Project Cost Summary**

The U-Link project cost is summarized in two types of cost classifications. In the first table, cost is classified in accordance with Sound Transit's Work Breakdown Structure (WBS); and in the second table, cost is summarized in accordance to the FTA's Standard Cost Categories (SCC) format. (Both tables' figures in millions.)

WBS Phase Elements	Baseline Budget	Current Adopted Budget	Commitment to Date*	Incurred to Date	Est. Final Cost (EFC)	Adopted Budget vs. EFC
ADMINISTRATION	115.2	115.2	44.6	45.1	115.2	0.0
PRELIMINARY ENGINEERING	24.4	24.3	24.3	24.3	24.3	0.0
FINAL DESIGN	77.9	87.6	83.9	74.7	87.6	0.0
CONSTRUCTION SERVICES	68.5	95.8	75.3	52.5	95.7	0.1
3rd PARTY AGREEMENTS	18.6	18.6	11.4	10.5	18.6	0.0
CONSTRUCTION	1,180.0	1,158.2	904.1	617.3	1,075.7	82.5
VEHICLES	103.9	103.9	99.2	98.9	103.9	0.0
ROW	167.3	152.3	125.5	125.5	127.7	24.6
Capital Total	1,756.0	1,756.0	1,368.4	1,048.7	1,648.7	107.3
FINANCE COST	191.7	191.7	191.7	80.8	191.7	0.0
Project Total	1,947.7	1,947.7	1,560.1	1,129.5	1,840.5	107.3

Note: Financing Cost for Q4 2012 in the amount of \$5.2M was inadvertently omitted from the about table in the January and February 2013 progress Report. (\*)Totals may not equal column sums due to rounding of line entries.

The March 2013 projected Estimated Final Cost (EFC) including Finance Cost continues to remain at \$1.84B. This period, approximately \$11.1M was incurred, increasing the project incurred to date amounts to almost \$1.05B (Finance Cost excluded). Direct construction cost accounted for over 74% of the cost incurred in March at \$8.6M. The direct construction EFC continues to trend at \$1.08B. This trend will be improving as both the tunnel scope are now concluding. The Capitol Hill Station (U240) contractor has successfully completed their first concrete placement and the Systems (U830) Contractor have been receiving rail shipments since February 2013. The total incurred to date for the Construction Phase is approximately \$617M with a current commitments of over \$904M. Cost for LRV is at \$98.9M with a commitment of approximately \$99.2M due to an adjustment in sales tax and a minor change as close- out commences.

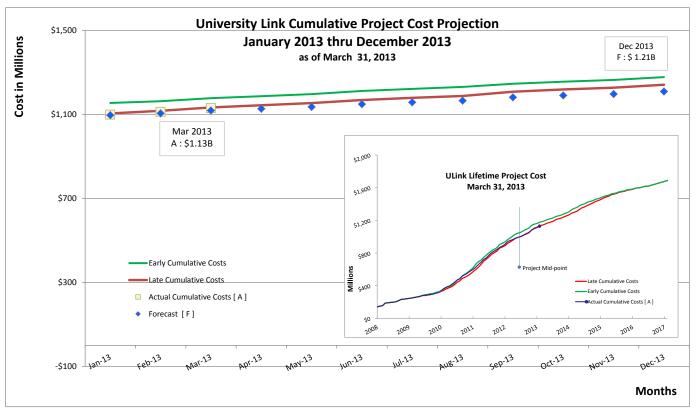
Construction EFC under the SCC format for this period remains stable and relatively unchanged at about \$1.02B. Construction phase expenditures in March is at \$8.5M to which almost 70% of this period's cost is attributed to station work. U-Link construction continues to transition from the tunneling scope to station construction with Systems scope ramping up. U220 and U230 work are largely associated with tunnel finishes and is rapidly is winding down. U220 has been challenged with controlling the ground water condition at Cross Passage 17 and was successful in mitigating that issue. U250 station scope including the pedestrian bridge across Montlake Boulevard is progressing with the bridge deck completed and falsework over the street is planned to be removed in early April.

Project Elements by SCC	Baseline Budget	Current Adopted Budget	Commitment to Date*	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guidew ay & Track Elements	626.8	555.4	417.5	375.5	471.9	83.4
20 Stations	366.3	367.0	329.0	182.1	363.2	3.9
30 Support Facilities: Yards, Shops	7.0	7.1	7.0	7.0	23.1	-16.0
40 Sitew ork & Special Conditions	59.0	72.1	56.7	43.3	59.8	12.3
50 Systems	69.6	102.7	89.1	7.7	106.3	-3.6
Construction Subtotal (SCC 10-50)	1,128.8	1,104.2	899.4	615.6	1,024.3	80.0
60 Row, Land, Existing Improvements	167.3	127.7	125.5	125.5	127.7	0.0
70 Vehicles	99.8	99.8	99.2	98.9	99.8	0.0
80 Professional Services	306.5	342.2	244.2	208.7	344.0	-1.9
90 Unallocated Contingency	53.5	82.1	0.0	0.0	53.0	29.1
Capital Cost Total (SCC 10-90)	1,756.0	1,756.0	1,368.4	1,048.7	1,648.7	107.3
100 Finance Cost	191.7	191.7	191.7	80.8	191.7	0.0
Project Total	1,947.7	1,947.7	1,560.1	1,129.5	1,840.5	107.3

Note: Financing Cost for Q4 2012 in the amount of \$5.2M was inadvertently omitted from the about table in the January and February 2013 progress Report. (\*)Totals may not equal column sums due to rounding of line entries.

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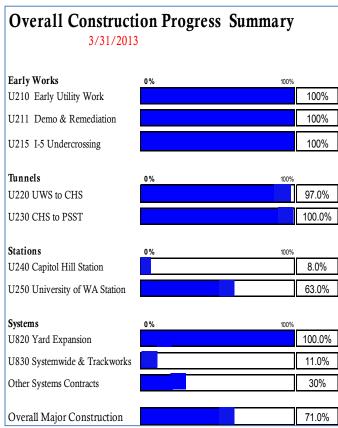


Incurred to date for Construction under the SCC is over \$615M or roughly 55% of the budgeted construction scoped to date. Total capital cost incurred to date including non-construction cost (SCC 60 thru 90) is at \$1.05B or about 59% of total project budget (excluding Finance Cost).

Maintenance of Way building (U810) is estimated at about \$16M is now incorporated into SCC 40. This cost was not originally part of the baseline estimate. This cost is offset from an decrease in SCC 10 Guideway & Track Elements where the tunneling scope is now concluding.

Total cost incurred at the end of March 2013 including Finance Cost is over \$1.1B. The Project financing cost incurred to date is \$80.8M with an annual projection of \$26.7M to incur in 2013. The next finance cost up date will be for the 2nd QTR 2013. Overall, University Link cost to date is projected to be approximately \$1.2B by December 2013.

The EFC for project Finance Cost continues to be projected at \$191.7 million. This cost represents booked financing cost and is generated based on allocation of appropriate level of financing cost to each capital project at Sound Transit. Despite an earlier than anticipated release of \$44 million of the FFGA funds due to the American Recovery Reinvestment Act that was used to pay down finance charges, it is premature to project any savings at this time.



Note: The overall construction progress above is based on a weighted combination of duration, schedule and cost % complete for individual construction contracts as compared to the overall U-Link construction contracts.

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## **Cost Contingency Management**

Project contingencies continue to remain at healthy levels due to the favorable construction bidding climate, ROW acquisition cost trends, diligent project risk management practices and excellent tunneling conditions. March's overall contingency balance dropped by \$16M to \$340M due to the incorporation of the Maintenance of Way Building (MOW) estimate to the U-Link project. Contingency level continues to be well above the Planned Contingency Drawdown; the projected planned balance between the end of 4th QTR 2012 and the end of 1st QTR 2013 ranges from \$157M and \$137M and the Contingency Buffer was projected to be in the range of \$149M and \$133M, respectively. The projected planned Reserved Contingency balance will be reduced from \$80M to \$50M at the end of the 2nd QTR 2012 (see contingency curve at the bottom of page) in anticipation of the completion of tunneling and the next projected plan reduction is from \$80M to \$50M at the start of 2nd QTR 2013. Barring any catastrophic event, there is a very high likelihood that the contingency trend will remain intact and will improve as the tunneling scope comes to a conclusion.

<u>Design Allowance</u>: The balance of design allowance has been reduced to \$1.1M and is consistent with the project cycle as all the major design has been completed. The level of design allowance currently represents less than one-half percent of the total remaining scope in the project that has not been procured.

<u>Allocated Contingency</u>: The allocated contingency is reduced from \$303.3M to \$286.1M, largely to account for the incorporation of the MOW to the project (\$16M) and routine change orders continues to drawing down on this contingency. Allocated Contingency also remains stable

<u>Unallocated Contingency</u> (UAC): The total UAC balance remains at \$53M due and continues to remain stable compared to the Baseline Cost Estimate amount of \$53.7M.

Contingency	В	CE	Curren	t Status
Status	Amount	% of Total	Remaining Amount	% Remaining Work
Design Allowance	\$103.9	7.8%	\$1.1	0.3%
Allocated Contingency	\$264.3	19.8%	\$286.1	78.0%
Unallocated Contingency	\$53.7	4.0%	\$53.0	14.4%
Total:	\$421.9	31.6%	\$340.2	92.7%

Percentage = Contingency \$ /(EFC or Remain. Work \$ ex-Contingencies)

Table figures in millions

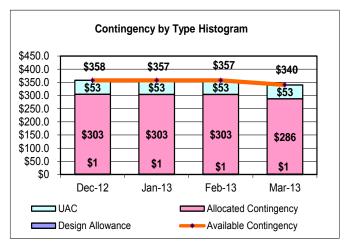
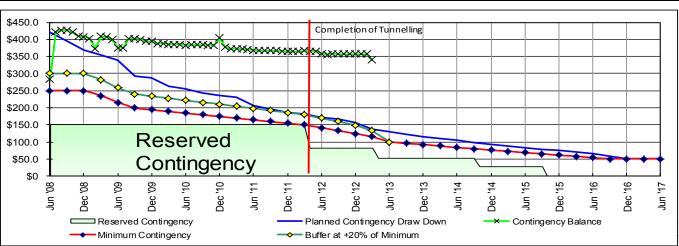


Table figures in millions





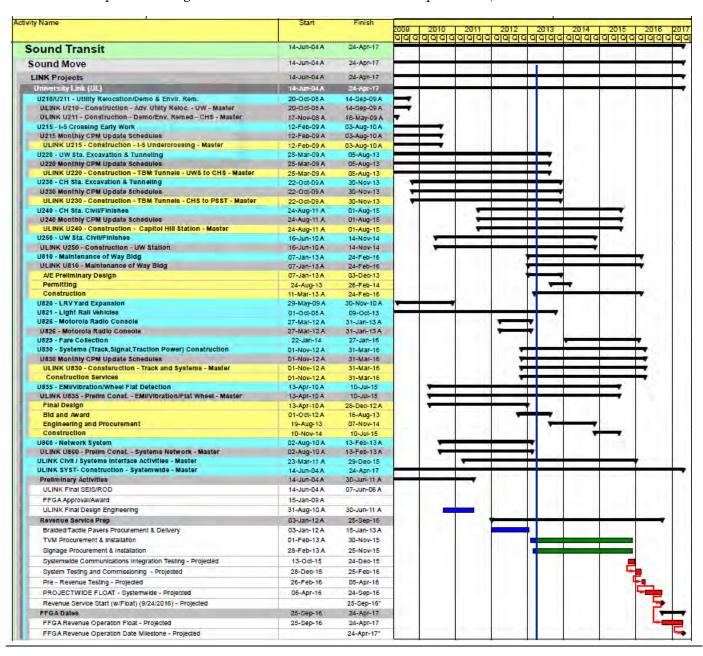


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## **Project Schedule Summary**

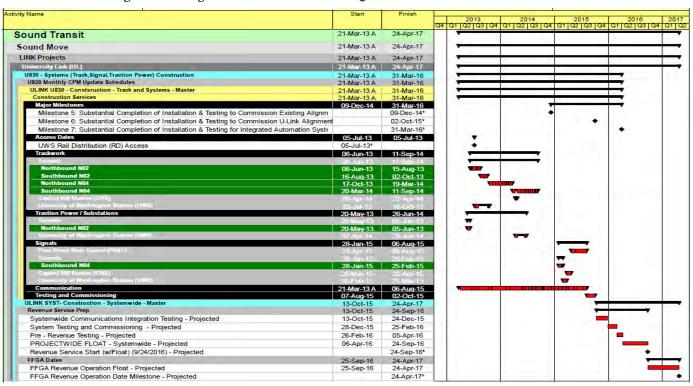
The University Link schedule is provided below. U210, U211 and U215 early work contracts have been completed. The U820 LRV Storage Yard Expansion Contractor has also completed all work. The U220 Northbound (NB) TBM completed mining on April 2012 and the Southbound (SB) TBM arrived at the Capitol Hill Station in March 2012. U220 cross passage (CP) mining is 100% complete; cross passage and tunnel finishes continue. The U230 achieved Substantial Completion this period and punchlist work and final documentation is underway. In U250, roof slab was completed from Grid 20 to 3. The Montlake Triangle Project pedestrian bridge work continues as falsework removal is underway. U240 CHS Station Finishes Contractor has mobilized on site and concrete work is well under way in the North, South and Central parts of the station. The Contractor has completed four wall pours in the central area of the station with the Peri Form system. Prep work for the topping slab pour at the south end of the station has commenced prior to the U830 track distribution activities. U830 Contractor has mobilized on site and is preparing for rail welding at CHS. Coordination between the U830 Systems Contractor and the station contractors continues. Procurement is expected to commence for U835 EMI/Vibration in the 2nd QTR 2013. U860 Fiber Retrofit; upgrades and fiber installation is now complete. The targeted revenue service milestone remains September 24, 2016.



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## **Progress and Critical Path Analysis**

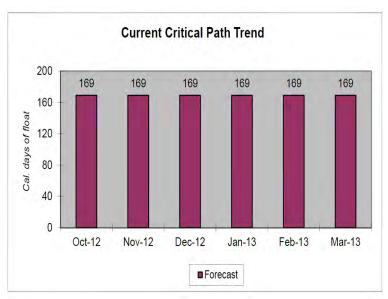
The U-Link master schedule update contains the tunnel contractors' schedules and interfaces with the stations and U830 (track, signal, traction power and communications system) schedules. Tunneling commenced in the 2nd QTR 2011 with the TBM assembly and launch. TBM mining was completed as of May 2012 and cross passage work is complete. U230 has achieved Substantial Completion and U830 is expected to charge rail in the south end of Capitol Hill Station next period. U240 will complete the topping slab and U830 will follow with rail distribution. The U240 Capitol Hill Station construction in now underway with two wall pours complete in the central area. U830 Baseline CPM schedule has been accepted and the U-LInk critical path is now based on the contractor's submittal. Two critical paths are shown below through 26kV cable installation, rail installation to cable installation to commissioning activities. Critical path #2 is through communication design and material submittals, installation and testing. U830 system-wide communication integration testing will commence in the 3rd QTR 2015.



#### **Critical Path**

The critical path for the University Link schedule (above) derives from the completion of the cross passages and finishes between CHS to PSST (U230), to the installation of track, communication cabling and commissioning. Critical contract interfaces for cable and equipment installation by U830 have been included in the Coordinated Installation Program assigned to both the station contractors. Progress will continue to be monitored closely.

U-Link project float contingency remains at 169 days. No additional delays occurred this period. Progress will continue to be monitored closely.



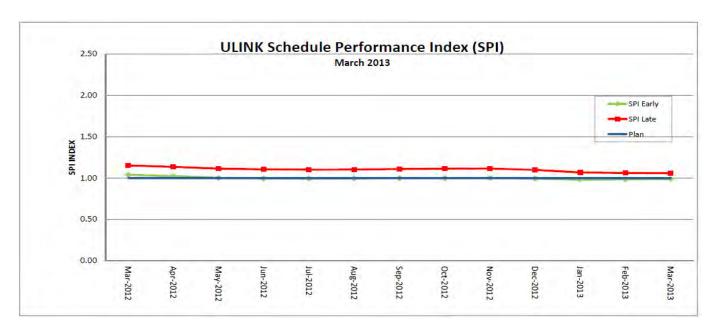
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### Progress and Critical Path Analysis, continued

### **Schedule Performance Index**

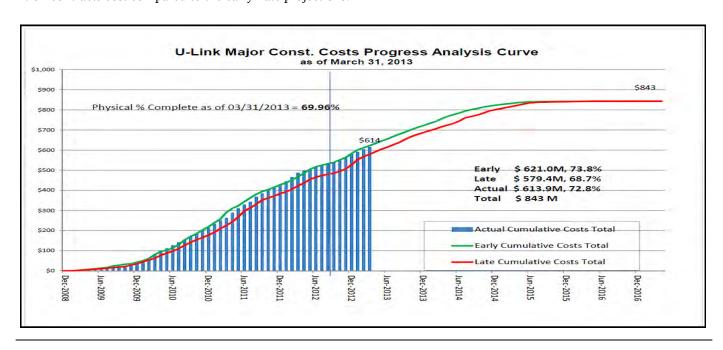
The Schedule Performance Index (SPI) for U-Link has risen slightly this period but is below 1.00 at .99 adjustments have been made to included the revised cash flow plan for U830 and U240. (See details on individual contract sections.) Progress will continue to be monitored closely.



### **Cost Progress Analysis**

U220 tunnel and cross passage finishes continue. U230 achieved Substantial Completion. U240 and U830 have both mobilized on site. U250 continues to progress ahead of schedule.

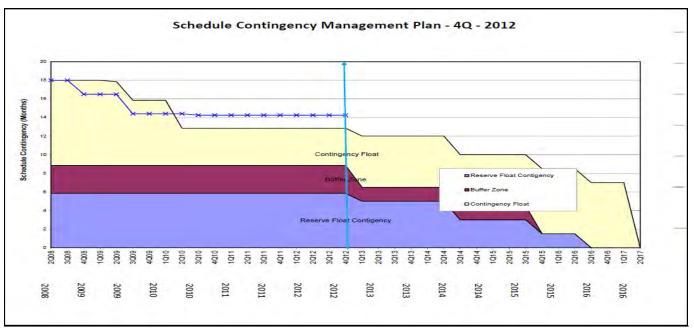
Overall U-Link physical % complete is at 69%. Below is a graphical representation of the progress of major construction contracts cost compared to the early/late projections.



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## **Schedule Contingency Management**

The "Minimum Schedule Contingency Curves" were established in the Project Execution Plan (PEP). The PEP segregated Schedule Contingency into "Forced Lag," which is a built-in float on the Critical Path; "Buffer Float," which is the duration between Sound Transit's targeted Revenue Operation Date and the Schedule Revenue Operation Date; "Contingency Float," which is the duration between Sound Transit targeted Revenue Operation Date and the FFGA Revenue Operation Date, and "Desired Minimum Float" which is the amount of schedule float the FTA requires Sound Transit to maintain. The current schedule contingency balance continues to be 14 months, 6 months above the "Desired Minimum Float" required by the PEP.



## Right-of-Way

The U-Link project involved the acquisition of a range of property interests, including fee takings for stations and staging areas, tunnel easements for the running tunnels, acquisitions from the University of Washington and airspace leases with the Washington Department of Transportation. These acquisitions required relocation of 141 owners and tenants. The right-of-way program status is summarized below.

Line Section	Total Parcels Certified	Offers Made	Signed Agree- ments	Admin. Settle- ments	Posses- sion and Use	Closings to date	Relocations Required	Relocations Completed
Capitol Hill Station	19	19				19	140	140
Tunnel Easements	223	222				222	1	1
TOTAL	242	241				241	141	141

<u>Capitol Hill Station</u>: The acquisitions and relocations for the station site are complete.

<u>Tunnel Easements:</u> All 222 parcels have closed. A WSDOT parcel continues to be in pending status; Sound Transit may not need this parcel for the project.

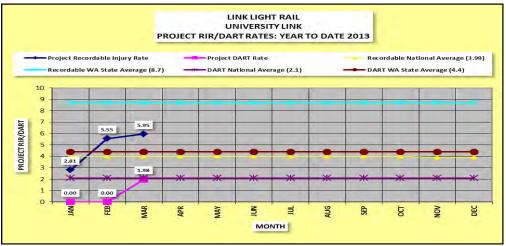
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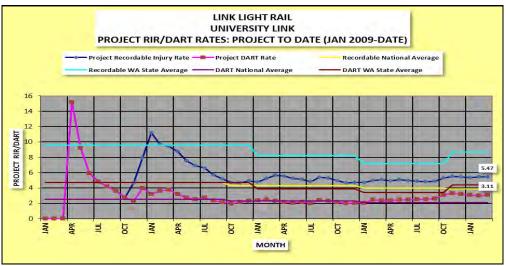
## **Construction Safety**

Safety statistics for the reporting period and year-to-date are summarized in the table and charts.

Data/Measure	Mar 2013	Year to Date	Project to Date
Recordable Injury/Illness Cases	2	6	65
Days Away From Work Cases	0	0	13
Total Days Away From Work	31	35	497
Restricted or Modified Work Cases	2	2	24
Total Days Restricted or Modified Work	69	214	1252
First Aid Cases	1	4	105
Reported Near Mishaps	3	15	184
Ave. Nos. of Employees on Worksite	313	-	-
Total # of Hours (GC & Subs)	56,681	201,560	2,376,068
OSHA Incident Rates	Monthly Average	Year to Date	Project to Date
Recordable Injury Rate	7.06	5.95	5.47
DART Rate	7.06	1.98	3.11
Recordable National Average	3.90	3.90	3.90
DART National Average	2.10	2.10	2.10
Recordable WA State Average	8.70	8.70	8.70
DART WA State Average	4.40	4.40	4.40



The charts to the right show University Link's Recordable Injury Rates (*RIR*) and University Link's Days Away, Restricted or Modified (*DART*) Injury Rate as compared to the national average.



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## **Quality Assurance Activities**

#### Activities

- U220 –MRB issued approval of RFD U220-14 for epoxy line swing check valves.
- U240 –MRB issued approval of RFDs U240-04 & U240-05, for substitution of manufacturer for metal stairs and hollow metal doors (respectively).
- U250 Issued QA Surveillance Report on Escalator Installation and Maintenance; Issued QA Surveillance Report on Montlake Triangle Pedestrian Bridge for ADA Compliance.
- U830 Reviewed and approved Stacy & Witbeck Subcontractor ARINC Facilities Quality Plan; Reviewed and approved Welder Qualifications submittal; Reviewed and provided comments for subcontractor ARINC Software Quality Assurance, Software Configuration Management and Software Project Management Plans.

#### Issues

• None to report.

Description	Mar 2013	Notes
No. of Audits Planned	0	None
No. of Audits Completed	2	U220 and U230 Contractors' Substance Abuse Prevention Plan Audits
Reports in Progress	0	None
No. of Audits Postponed	0	None

## **Community Outreach**

- Worked with Seattle Theater Group and the UW to resolve short term parking impacts to the Neptune Theater's events in early April.
- Notified UW stakeholders about Montlake Blvd. closure on April 6.
- Participated in the City of Seattle meeting on bike parking around the stations.

### Capitol Hill Business Mitigation

- Capitol Hill Business Mitigation Committee meeting held their meeting at the Capitol Hill Chamber of Commerce.
- Hosted a very well attended Business Technical Assistance luncheon at Seattle Central.

## **Sound Transit Board Actions**

Board motions and resolutions directly related to University Link are summarized in the table below.

Motion Number	Description	Date
	None to report.	

## **Environmental**

• Stormwater and industrial waste discharge permit compliance, along with the hazardous materials oversight, continue for the U-Link construction sites.

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# Link Light Rail University Link- Early Construction Work



# Early Works Contracts (U210, U211 & U215)

Early work contracts have been completed.

For the U210 Contract (Advanced Utility Relocation), Final Acceptance issued in May 2011. Finalizing remaining closeout items.

For the U211 Contract (Demo and Environmental Remediation), Final Acceptance has been reached.

For the U215 Contract (I-5 Crossing), All issues in this contract have been resolved.

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# Link Light Rail University Link Extension – Tunnels

## U220 Contract - TBM Tunnel (UWS to CHS)

### **Current Progress**

TBM mining and cross passage excavation is complete and cross passage finishes are nearing completion but due to mitigation work at CP #17 some work has been delayed. Installation of fire standpipe and handrail continue. Handover of Area G to the U230 Contractor has taken place. CP #17 mitigation and grouting is complete.

Physical % complete is at 99% against 93% contract time expended.

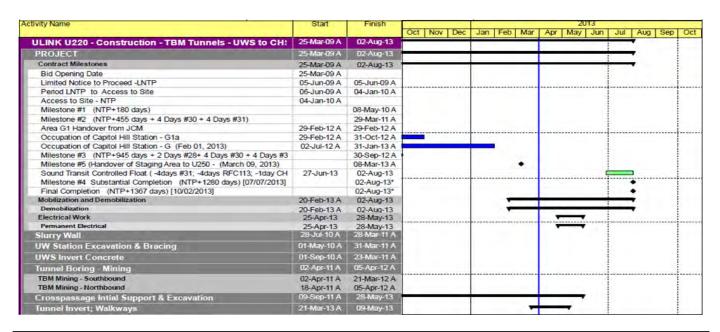
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Northbound Tunnel	Invert Concrete and Embedments	Non-Embedded Conduits (crown)	Fire Suppression Standpipe	Tunnel Walkway Concrete
Total Length (linear feet)	11,392	11,392	11,392	11,392
Completed This Week (linear feet)	0	0	70	0
Completed To Date (linear feet)	11,372	11,392	11,142	11,372
Percent Complete (linear feet)	99.8%	100.0%	97.8%	99.8%

Southbound Tunnel	Invert Concrete	Non-Embedded Conduits (crown)	Fire Suppression Standpipe	Tunnel Walkway
Total Length (linear feet)	11,392	11,392	11,392	11,392
Completed This Week (linear feet)	0	0	1,230	0
Completed To Date (linear feet)	11,372	11,272	11,072	11,152
Percent Complete (linear feet)	99.8%	98.9%	97.2%	97.9%

Cross Passages (Elec & Mech)	CP20	CP19	CP18	CP17A	CP17	CP16	(P15	(914	(P13	(912	CP11	(P10	(90)	CP08	CP07	CP06
Electrical Conduit and Equipment	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Fire Suppression Standpipe	0%	0%	0%	0%	0%	0%	0%	0%	0%	75%	0%	75%	75%	95%	95%	10%

#### Schedule/Critical Path

The schedule update for this period is reporting 26 days of negative float to Milestone #4, Substantial Completion, as the Contractor completes CP #17 mitigation and grouting. The CM team is expected to adjust the Sound Transit owner controlled float identified in the contract as final impacts are realized. MEP tunnel finishes are driving the critical path and impacting Substantial Completion. Production rates are being monitored closely.

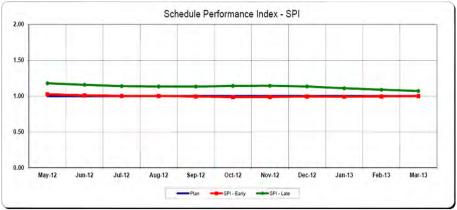


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#### Schedule Performance Index

The U220 Schedule Performance Index (SPI) remains below a 1.00 at .99, based on early finish. CP #17 water seepage has slowed production at tunnel and cross-passage finishes. Sound Transit will continue to monitor progress as the U220 cross passage and tunnel finishes continue through the end of the project.



## **Key Activities**

#### **Current Period**

- *Surface Tunnel Alignment:* Continued removal of instrumentation and structure settlement points.
- *NB Tunnel:* Continued invert spall repairs. Completed upper tunnel segment repair and patching. Completed installation of NB running tunnel cable splice.
- *SB Tunnel:* Continued handrail installation. Begin invert spall repairs. Completed upper tunnel segment repair. Completed installation of running tunnel cable.
- Cross passages: Continued installation of permanent electrical equipment, lighting and interior wiring. Continued additional FUKO grouting. Continued NB standpipe loop infill, Completed installation of doorframes. Continued SB sidewalk infill. Began installation of interior CP standpipe.

### Next Period

- *Surface Tunnel Alignment:* Continued removal of instrumentation and structure settlement points.
- NB & SB Tunnels: Continue invert spall repairs. Continue upper segment and tunnel repairs, patching, and cleaning. Continue handrail installation. Continue installation of running tunnel electrical cable in NB tunnel.
- *Cross Passages:* Continue FUKO grouting. Complete installation of interior wall. Begin installation of interior standpipe. Complete grouting of doorframes.

#### Closely Monitored Issues

• TFK was notified by Turner, the U240 Contractor, that the temporary power for permanent lighting at CHS could be disconnected multiple times over the next few months. However, Turner is working on a plan to minimize the number of outages.

## **Cost Summary**

Present Financial Status	Amount
U220 Contractor— Traylor Frontier- Kemper Joint Venture (TFK)	
Original Contract Value	\$309,175,274
Change Order Value	11,496,619
Current Contract Value	\$ 320,671,893
Total Actual Cost (Amount Billed)	\$ 312,223,250
% of Authorized Billed to-date	97.4%
Physical Percent Complete:	99%
Authorized Contingency	\$30,917,527
Contingency Drawdown	\$11,496,619
Contingency Index*	2.57





Installing electrical panels and conduit in CP #18.

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## U230 Contract -TBM Tunnel (CHS to PSST)

## **Current Progress**

Substantial Completion was achieved this period. The Contractor will continue to complete the punchlist items and final documentation. Work is complete at 100% physical completion and 100% time.

### Schedule/Critical Path

The U230 has achieved Substantial Completion. The final turnover of Area C to U240 has been completed.

ctivity Name	Start	Finish	2012		2013	2013		
				01		Q2	C	
ULINK U230 - Construction - TBM Tunnels - CHS to PSS	17-Dec-09 A	13-Apr-13			_			
Current Calculated Milestone Dates	29-Feb-12 A	13-Apr-13			-			
Current Calculated MS 1.1: U220 TBM Breakthrough into U230 Station (Handover of Area G1) 3/1/12		29-Feb-12 A						
Current Calculated MS 1.2: U220 TBM Removal from U230 Station (Handover of Area G2) 7/1/12		29-Jun-12 A						
Current Calculated MS 2 Vacate Area A (east CHS) 11/01/12		31-Oct-12 A						
Current Calculated MS 3 Vacate Area B (west CHS) 12/01/12		30-Nov-12 A						
Current Calculated Demobe from CHS NTP+1157 (03/13/13)		13-Mar-13 A						
Current Calculated MS 4 Substantial Completion NTP+1157(03/13/13)		13-Mar-13 A		•				
Current Calculated MS 4 Final Acceptance NTP+1187(04/12/13)		13-Apr-13			•			
Capitol Hill Site	01-Mar-13 A	12-Mar-13 A		_	1.74			
Capitol Hill Shaft Exavation	25-Feb-10 A	23-May-11 A						
Capitol Hill Shaft Invert Slab	06-Jan-11 A	09-May-11 A						
Northbound (NB) Tunnel	17-Dec-09 A	08-Mar-13 A						
Southbound (SB) Tunnel	12-Dec-11 A	12-Mar-13 A						
Cross Passage Construction	24-Feb-12 A	04-Jan-13 A	-					
Low Point Sump Construction	10-Sep-12 A	27-Feb-13 A						
Contract Closeout	12-Mar-13 A	13-Mar-13 A						

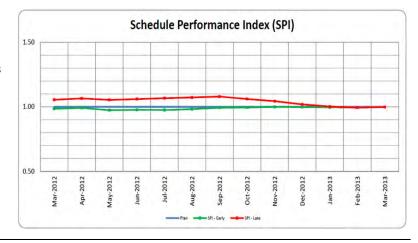
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# Link Light Rail University Link Extension – Tunnels



### **Schedule Performance Index**

The U230 Schedule Performance Index (SPI) has risen to 1.0. The contract was completed as scheduled.



## **Key Activities**

#### Current Period

- *NB & SB Tunnels:* All work in the tunnels were completed and Substantial Completion achieved on March 13, 2013. All punch list items were completed.
- Cross passages: All work was completed and Substantial Completion achieved on March 13. The Contractor continues to work on outstanding punch list items, specifically grouting of the Fuko hoses and sealing of all moisture infiltration.
- *CHS:* All work was completed and Substantial Completion achieved on March 13. All punch list items were completed.
- *Pine St.:* All work was completed and Substantial Completion achieved on March 13. All punch list items were completed.

#### Next Period

- *Cross Passages*: Continue grouting of the FUKO hoses in all cross passages. Contractor to continue to address punch list items ahead of Acceptance.
- Close-out Activities: Continue working on close out material, including submittal of all as-built drawings, all contractual affidavits, warranties, O&M Manuals, etc.

#### Closely Monitored Issues

 Concern at the progress of the FUKO hose grouting and whether it has been completed remains. JCM has responded to ST's recent letter that refuted their alleged waterproofing design deficiency at the cross passages by submitting a further letter relating to the alleged RFC identifying increased costs.

## **Cost Summary**

Present Financial Status	Amount
U230 Contractor— JCM Joint Venture	
Original Contract Value	\$153,556,000
Change Order Value	\$9,603,049
Current Contract Value	\$163,159,049
Total Actual Cost (Amount Billed)	\$156,375,803
% of Authorized Billed to-date	96%
Physical Percent Complete:	100%
Authorized Contingency	\$15,355,600
Contingency Drawdown	\$9,603,049
Contingency Index*	1.52

<sup>\*</sup>Physical % complete / % contingency drawn down



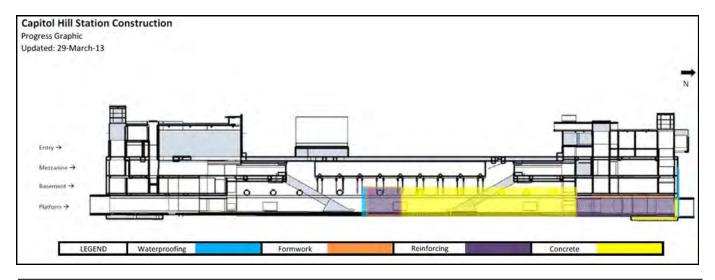
South headwall of SB tunnel portal at the Capitol Hill Station.

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## **U240 Contract** – Capitol Hill Station

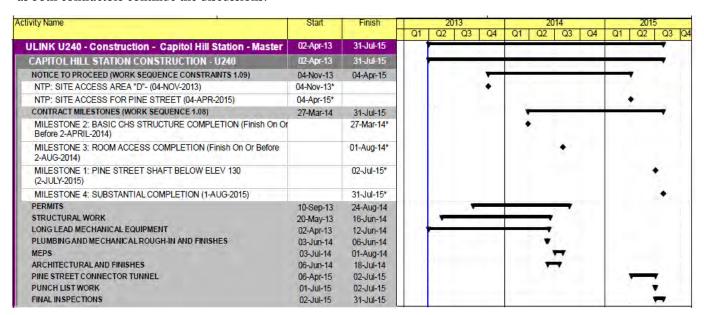
### **Current Progress**

The U240 Contractor (Turner Construction Company) has fully mobilized on site. Four major wall pours in the central area are complete. Work is also taking place in the North End and South End of the project. The U830 is expected on site in April to charge rail into the South End tunnels. The baseline CPM Schedule has been accepted. Physical % complete is at 4% against 14% contract time expended.



#### Schedule/Critical Path

The Contractor has fully mobilized on site and work is also taking place in the North End and South End of the project. The critical path will continue through the central structure to the south end and into architectural finishes as the Contractor completes the systems rooms for turnover to U830, Milestone #3. The access constraints at Pine Street will remain the driver to Substantial Completion but may be mitigated in the future by the Coordinated Installation Program as both contractors continue the discussions.



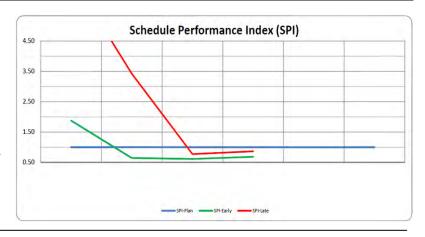
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#### Schedule Performance Index

The U240 Schedule Performance Index (SPI) remains below a 1.0 at 0.8 due to the delays in waterproofing installation and rebar material invoicing.

The current schedule update indicates that the Contractor is currently meeting contract milestones. Production levels and material procurement will continue to be monitored closely.



## **Key Activities**

#### **Current Period**

- Continued prep works on the lagging wall in advance of waterproofing and reinforcing installation in Areas' A, B, C, & G east and west walls ahead of the concrete work. Completed the 3rd and 4th concrete wall pours and the north TBM base slab.
- Area C was handed over to Turner this month, as planned. The entire station box is now under Turner.
- Began forming the north area G interior walls of the platform level, followed by mechanical and electrical work.
- Rebar International continued fabrication of wall mats and strut cages on the surface and continued placing rebar for pours in areas A & G.
- Subcontractors continued installation of the mechanical piping and electrical conduits in the south end TBM base slab ahead of the concrete pour (scheduled for early part of next month).

#### Next Period

• The south TBM base slab concrete pour to occur early part of next month.

- Continue waterproofing and reinforcing work following completion of prep works on the lagging walls in preparation for concrete pours #5 to #7.
- The waterproofing subcontractor Wisko will continue installation of waterproofing felt and membrane splice work in areas A, C, & G. They are currently about one pour ahead.
- The reinforcing subcontractor to continue delivering rebar on site and continue assembly of the reinforcing wall mats on the top side of the station box. Rebar installation to continue in the platform level of the station in areas A, C & G.

## **Closely Monitored Issues**

MacDonald Miller met with their supplier Clarage concerning pre-delivery and pre-installation tunnel fan costs for submittals, fabrication and factory testing with no resolution. An additional meeting is being scheduled with higher Clarage management. Clarage is currently holding fan submittals until the issue of pre-delivery costs are resolved. Turner has placed MMFS on notice that this issue must be resolved immediately to prevent schedule delay.

## **Cost Summary**

Present Financial Status	Amount
U240 Contractor - Turner Construction	
Co.	
Original Contract Value	\$104,850,276
Change Order Value	\$0
Current Contract Value	\$104,850,276
Total Actual Cost (Amount Billed)	\$8,987,756
% of Authorized Billed to-date	8.5%
Physical Percent Complete:	4%
Authorized Contingency	\$5,242,514
Contingency Drawdown	\$0
Contingency Index	N/A



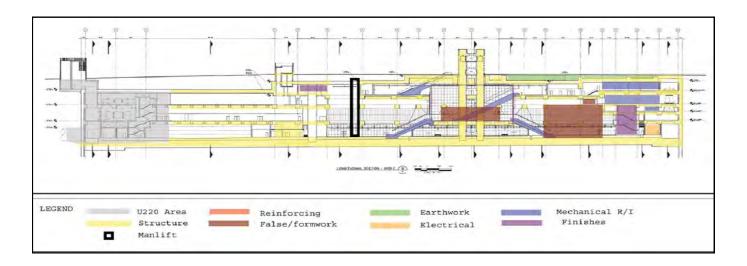
Overall progress of U240- looking south.

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## U250 Contract – University of Washington Station

### **Current Progress**

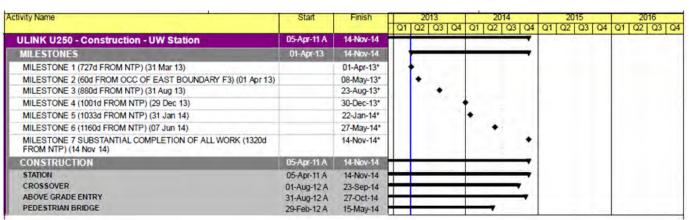
Roof slab is complete from Grid 20 to 3. CMU walls installation is well underway in the station. MEP rough in at the station is well underway. Elevator shaft wall construction has commenced as the U250 contractor moves toward BSC at the UW Station. At the Montlake Triangle Pedestrian Bridge falsework removal over Montlake will take place early next period. Work progress continued with approximately 65% physical completion against 55% contract time expended.



#### Schedule/Critical Path

Milestone #1, Basic Structure Complete, is reporting one day of negative float but is expected to complete early next period. Milestone #7, Substantial Completion, is reporting no float. The Contractor is meeting production forecasts at this time.

The critical path continues through the installation of the station roof slabs, basement level and platform floor slabs under a modified top down construction plan. The U250 Contractor continues work on the crossover area. Systems critical rooms will be made available to the U830 Systems Contractor, as the station and crossover nears completion. Final testing and commissioning will then complete the U250 work.

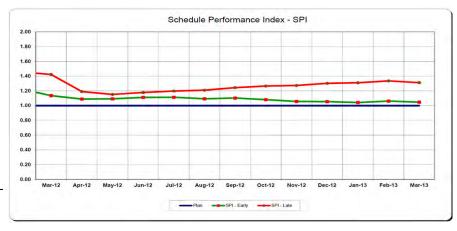


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#### Schedule Performance Index

The U250 Schedule Performance Index (SPI) remains above a 1.00 at 1.06 this period. Construction progress is trending ahead of the plan but has fallen slightly again this period. The current schedule update indicates that the Contractor is ahead of schedule but interim milestone float is diminishing for Milestone #3. Production levels and material procurement will continue to be monitored closely.



### **Key Activities**

#### Current Period

- Continued overhead HVAC, Electrical, Plumbing and Sprinkler rough-ins and Mechanical insulation with Heat Trace installation for Piping at multiple levels.
- Continue CMU and Cement Board Walls in various section and levels in the Basement Levels. Continue CMU and Cement Board Walls in various section and levels in the Basement Levels.
- Complete Electrical Rough in for Elevator 1 & 2 Machine Room. Complete installation of weather protection on escalator 2 thru 5.
- Montlake Triangle Project, SP-1 Pedestrian Bridge: Commence guardrail and light pole installation along Frame 1. Continue false work installation for Frame 2.

#### Next Period

- Continued overhead HVAC, Electrical, Plumbing and Sprinkler rough-ins and Mechanical insulation with Heat Trace installation for Piping at multiple levels.
- Continue CMU and Cement Board Walls in various section and Basement Levels.
- Continue framing for Elevator 1 & 2 shaft walls.
- Continue structural steel framing and decking.
- Triangle Project, SP-1 Pedestrian Bridge: Complete removal of formwork at Frame 1 and continue light pole installation along Frame 1. Continue false work installation for Frame 2. Complete Bike Ramp piers 5 thru 8 footings. Commence work for Elevator/Stair 3 structure.

#### **Closely Monitored Issues**

• Complexity of MTP interface and coordination with UW Husky stadium renovation activity.

### **Cost Summary**

Present Financial Status	Amount
U250 Contractor - Hoffman Construction	
Co.	
Original Contract Value	141,745,898
Change Order Value	2,073.325
Current Contract Value	143,819,223
Total Actual Cost (Amount Billed)	86,472,243
% of Authorized Billed to-date	60.1%
Physical Percent Complete:	65%
Authorized Contingency	7,087,295
Contingency Drawdown	2,073.325
Contingency Index	2.22



Site overview of U250.

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# Link Light Rail University Link Extension - Systems

U820 Contract - LRV Storage and Yard Expansion

U830 Contract - Track, Signal, Traction power and Communications Systems

P821 Contract - Light Rail Vehicles

C802 Contract - Signals Systems

U830 Contract - Track, Signal, Traction Power and Communications

## **Key Activities**

#### Current Period

U820- LRV Storage and Yard Expansion

Completed all work.

P821 – Light Rail Vehicles

- Continued warranty activities.
- Continued minor change order activities.

C802 - Signals System

• Completed all work.

Other Systems

- Issued Substantial Completion to U860 Network Fiber Network.
- Continued coordination of Agency initiated system network standardization.
- Continued manufacturing, staging and pre-installation activities for U826 Radio Console upgrade.
- Commenced procurement preparation on U810 MOW Building Scope.

### Next Period

P821 – Light Rail Vehicles

- Continue warranty activities.
- Continue minor change order activities.

#### Other Systems

- Issue substantial completion to U860.
- Continue coordination of Agency initiated system network standardization.
- Continue manufacturing, staging and pre-installation activities for U826 Radio Console upgrade.

### **Closely Monitored Issues**

• None to report this period.

## **P821 Cost Summary**

Present Financial Status	Amount
P821 Manufacturer — Kinkisharyo Intl.*	
Original Contract Value (U-Link Option)	\$94,576,095
Change Order Value	\$4,598,480
Current Contract Value	\$99,174,575
Total Actual Cost (Incurred To Date)	\$98,643,296
% of Authorized Billed to-date	99.5%
Financial Percent Complete:	100%
Authorized Contingency	\$4,608,904
Contingency Drawdown	\$4,598,480
Contingency Index	N/A

<sup>\*</sup>Change Order to Initial Segment LRV Contract

### **C802 Cost Summary**

Present Financial Status	Amount
C802 Train Control —GETS Global Signaling, LLC*	
Original Contract Value (U-Link Option)	\$1,996,269
Change Order Value	\$15,390
Current Contract Value	\$2,011,659
Total Actual Cost (Incurred To Date)	\$1,949,694
% of Authorized Billed to-date	98%
Physical Percent Complete:	~99%
Authorized Contingency	\$103,731
Contingency Drawdown	\$15,390
Contingency Index	N/A

<sup>\*</sup>Change Order to Initial Segment Train Control Contract. 55% of contract costs are assigned to U-Link 45% Northgate Link.

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# Link Light Rail University Link Extension - Systems



## U830 Contract - Track, Signal, Traction Power and Communications

### **Current Progress**

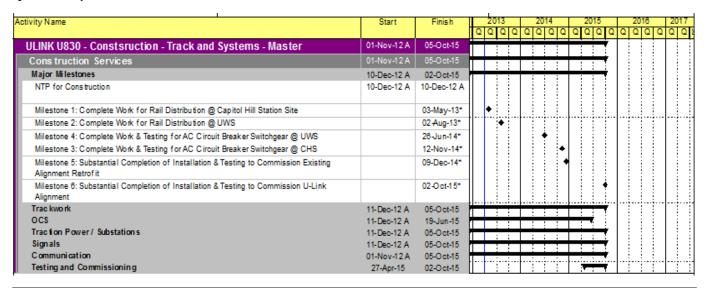
Notice to Proceed (NTP) was issued in December 2012. The U830 is now mobilized and preparing for rail welding and charging at CHS next period. Tunnel surveying continues and construction submittal preparation is ongoing. A baseline CPM schedule was submitted and accepted this period.

Physical % complete is at 4% against 11% contract time expended.

#### Schedule/Critical Path

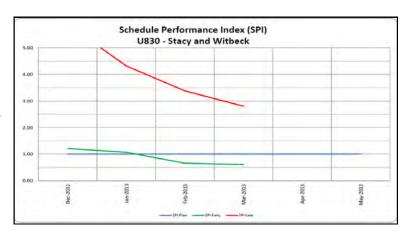
Milestone #6 Substantial Completion is reporting 0 days of float but critical submittals and procurement activities are reporting behind schedule based on a baseline comparisons. Contractor production rates and construction submittals are being tracked closely.

The critical path #1 continues through installation of 26kv cable and track through communication cable to Systemwide Testing. Critical Path #2 runs through system room access in July of 2014 at CHS for communication cabling and equipment installation. The Coordinated Installation Program may resolve this constraint by utilizing a phased approach to system room access.



#### Schedule Performance Index

The U830 Schedule Performance Index (SPI) is reporting below a 1.00 at 0.6 due to coordination issues with U240. TBM Slab installation and the rail welding and charging at CHS (originally scheduled this period) were rescheduled to end of April. Submittals and material procurement activities have impacted the SPI this period. The current schedule update indicates that the Contractor is currently meeting contract milestones. Production levels and material procurement will continue to be monitored closely.



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## **Key Activities**

#### Current Period

- Took over custody of the Pine Street staging site and the NB and SB tunnels on March 14, 2013.
- Completed installation of the temporary tunnel ventilation system near CHS.
- Removed bumping posts in the Pine Street Stub Tunnel and replaced with wheel stops to facilitate efficient hi-rail access between the operating and construction portions of the tunnels. Completed modification of temporary track walkways during the third week in March.
- Completed and received approval for the CPM Baseline Schedule and Schedule of Values late March . Several other critical technical submittals and work plans have been submitted and are in various phases of review and approval.
- *Trackwork:* Rail: The shipment for all the rail was delivered to the supplier's yard in Seattle by mid-February 2013. SWI procured and selected Jesse Engineering to fabricate the Ultra Straight Rail. The ultra-straight milling was cut mid-March and was transported to Jesse Engineering. CM team continuing to monitor the re-design of the floating slab. Nortrak continuing engineering work. The first shipment of rail fasteners arrived in Seattle late March 2013.
- *Traction Power Systems*: EC/CM contractors continue to submit several technical submittals and work plans and are in various phases of review and approval

#### Next Period

- Continue technical meetings and coordination meetings.
- Continue to submit RFIs and other technical submittals. ST will continue to review and monitor.
- Next Quarterly Risk Mitigation meeting scheduled for early April.
- Continue progress meeting with U-Link CM Team.

### **Closely Monitored Issues**

- Contractor has fallen behind in the submittals related to the Systems Assurance. SWI will submit a letter explaining their recovery plan to fulfill the contractual requirements.
- Floating Slab: SWI has been directed to stop any further investigation on the floating slab based on current design. A new design will be issued by ST. It has been determined that the current schedule could support the delay caused by the redesign of the floating slab.
- Monitoring Licensing Agreement provided by ARINC: ARINC reviewed ST's comments and resubmitted it to ST for final review.

### **Cost Summary**

Present Financial Status	Amount
U830 GC/CM Contractor - Stacy & Witbeck	
Original Contract Value	\$119,167,433
Change Order Value	\$0
Current Contract Value	\$119,167,433
Total Actual Cost (Amount Billed)	\$4,565,676
% of Authorized Billed to-date	3.8%
Physical Percent Complete:	4%
Authorized Contingency	\$5,958,373
Contingency Drawdown	0
Contingency Index	N/A

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# Link Light Rail Northgate Link Extension



## Scope

Limits: The Northgate Link Extension consists of 4.3

miles of light rail extending from the University of Washington to Northgate.

Alignment: The extension begins at the UW Station,

boring tunnels under campus then continues north to a portal located north of NE 94<sup>th</sup> Street on the east side of I-5, then transitioning to an aerial structure running north to the

Northgate Mall.

Stations: The U District station is an underground sta-

tion located on the west side of the UW campus near Brooklyn Ave. and NE 45<sup>th</sup> St. The Roosevelt Station is an underground station located near NE 65<sup>th</sup> St. and 12<sup>th</sup> Ave NE. The Northgate Station is an elevated station located at the southwest edge of the

Northgate Mall.

Systems: Signals, track electrification, and SCADA

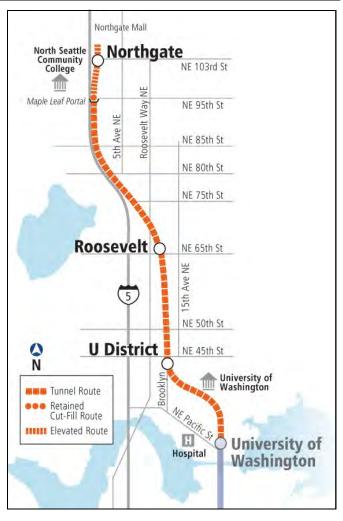
communications, as well as an additional 40

light rail vehicles are included.

Budget: \$2.131 Billion Service: September 2021

Phase: Final Design and early site preparation and

utility relocations.



Map of Northgate Link Extension route and stations.

## **Key Project Activities**

- Contract N125 TBM Tunnels was advertised for bids. A pre-bid meeting was held with a very good turnout of prospective bidders.
- Contract N110 Utility Relocation at Roosevelt was awarded and NTP issued. Preconstruction meeting was held, and Titan Earthworks is expected to mobilize to the site in early April.
- The Roosevelt Noise Variance appeal was rescinded. Variance approval stands as issued.
- Seattle City Light has begun their utility relocation work at the Roosevelt area.
- Continued coordination with Simon Property Group regarding parking accommodations at Northgate Mall.
- Completed Risk Register Review meetings for Contracts N110, N112, N125, N111, N160, and N180.
- Continued coordination with Seattle City Light on utility relocations and power requirements at the Maple Leaf Portal and Northgate area.

Received and reviewed proposals submitted for Preliminary engineering of a pedestrian/bike bridge over I-5. ST and KCM are serving in advisory role to the City in the selection of the design consultant.

## **Closely Monitored Issues**

- After appeal, the U District MUP and Noise Variance approval decision has been granted. ST and DPD are working to finalize approvals and to expedite issuance of the MUP needed to allow site demolition to begin by the anticipated NTP date in April.
- Sound Transit and the UW continue to coordinate on the station structure design as it relates to the TOD overbuild, and finalize the property exchange agreement and rights of entry required for the start of demolition at the U District station .site.
- Design work has been suspended on the N160 Aerial Guideway and Northgate Station to accommodate further transit center design and traffic accommodations. ST continues to coordinate with KCM, WSDOT and the City.

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# Link Light Rail Northgate Link Extension

## **Project Cost Summary**

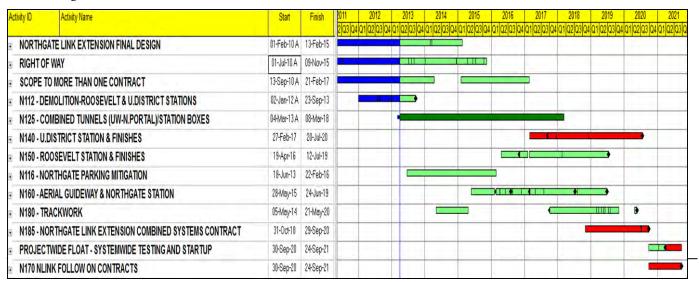
The baseline budget for the Northgate Link Extension is \$2.1B. The following table (figures in millions) summarizes the cost information for the Project.

	Lifetime Budget	Commitment to Date	Incurred to Date*	Forecasts and Trends	Estimated Final Cost (EFC)	Budget vs. EFC
Administration	\$149.5	\$149.5	\$12.9	\$13.2	\$149.5	\$0.0
Preliminary Engineering	\$15.1	\$15.1	\$15.1	\$15.1	\$15.1	\$0.0
Final Design	\$113.1	\$113.1	\$95.8	\$54.0	\$113.1	\$0.0
Construction Services	\$112.1	\$112.1	\$75.5	\$1.3	\$112.1	\$0.0
3rd Party Agreements	\$11.0	\$11.0	\$9.8	\$2.2	\$11.0	\$0.0
Construction	\$1,323.5	\$1,323.5	\$20.4	\$10.0	\$1,323.5	\$0.0
Vehicles	\$259.1	\$259.1	\$0.0	\$0.0	\$259.1	\$0.0
ROW	\$148.1	\$148.1	\$50.3	\$49.1	\$148.1	\$0.0
Total	\$2,131.4	\$2,131.4	\$279.7	\$144.8	\$2,131.4	\$0.0

## **Project Schedule**

The baseline schedule for the Northgate Link Extension establishes a Revenue Service date of September 2021.

Due to GC/CM methodology for N140 and N150, Final Design for those two contract packages was put on hold until procurement of GC/CM contractor was completed. Procurement projected to complete 2nd QTR 2013 at which time Final Design will resume.



## Right of Way

The U District and Roosevelt stations require the acquisition of a range of property interests including fee takings for stations and staging areas; tunnel easements are required for the running tunnel. These acquisitions will result in owner and tenant, residential and commercial relocations. In addition, property acquisition for the Roosevelt Station location involved the advanced acquisition of three parcels that the Sound Transit Board approved in June and October 2006. The right-of-way status as of this period is summarized in the following page.

U District Station – There are 16 parcels certified for the U District Station location. Sound Transit settled with the owner of two of the parcels by leasing the properties for the duration of the construction contract. All relocations are complete. An offer was made to University of Washington for two parcels and a settlement has been reached. Appraisals were completed on the remaining eleven parcels required for the Station and offers are being made. Six parcels have been submitted for condemnation, one is to be de-certified and four have closed.

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# Link Light Rail Northgate Link Extension



## Right of Way, continued

Line Section	Total Parcels Certified	Offers Made	Signed Agree- ments	Admin. Settle- ments	Posses- sion and Use	Closings to date	Baseline Relocations Required	Reloca- tions Complet- ed
U District Station	16	15	ĺ	0	0	4	3	ĺ
Roosevelt Station	22	20	0	0	0	16	26	26
Tunnel Easements	190	187	12	0	0	140	0	0
Maple Leaf Portal	5	0	0	0	0	0	0	0
Total	233	222	13	0	0	160	29	27

Roosevelt Station – There are 22 parcels certified for the Roosevelt Station location. Offers has been made on 15 properties and 15 parcels have been acquired. All 26 relocations have been completed. On July 28, 2011 the Sound Transit Board authorized the acquisition of property rights from an additional eight parcels adjacent to the Roosevelt Station footprint. Civil has dropped one of those parcels from further consideration, one parcel is in negotiation, one parcel is in condemnation, two parcels are in negotiation, two parcels are waiting for re-appraisals to be completed and one parcel is being tracked as a tunnel easement.

Northgate Link Tunnel Easements – In July 2010, the Sound Transit Board authorized the acquisition of a tunnel easement from the University of Washington. The offer for this easement was made in February 2011 and a settlement has been reached. Appraisals of an additional 116 tunnel easements between Husky Stadium and the Roosevelt Sta-

tion are expected to be completed by August 2013. Offers have been made on all but 2 of these parcels and negotiations continue. On March 22, 2012, the Sound Transit Board authorized the acquisition of 57 tunnel easements and 10 utility easements between Roosevelt Station and Northgate Station. The appraisal process was completed in August 2012 for all except the utility easements. All tunnel easement offers are completed. Agreement has been reached on tunnel easements with more than half of the owners. All of the tieback easement appraisals are completed and those offers have been made. On July 5, 2012, the Board authorized acquisition of five parcels, which require 2-3 takes per parcel, including aerial guideway easements, temporary construction easement and fee takes. Three offers have been made on 3 parcels for utility relocation work. On February 28, 2013, the Sound Transit Board authorized the acquisition of 2 temporary construction easements at Northgate Station. No offer is currently needed for either parcel.

## **Quality Assurance Activities**

#### **Activities**

None to report.

#### Issues

None to report.

#### Summary

Description	Mar 2013	Notes
No. of Audits Planned	0	None
No. of Audits Completed	0	None
Reports in Progress	0	None
No. of Audits Postponed	0	None

## **Environmental**

 Working with design team to refine wetland impacts and mitigation opportunities..

## **Community Outreach**

- Sent monthly e-newsletter to approximately 3,000 subscribers.
- Compiled project update article for the April issue of The Roosie.
- Presented the Outreach communication plan for the U District Station at the UW quarterly briefing.
- Posted construction update on ST web page for potholing work on March 21.

#### **Business Mitigation**

- Hosted the U District Station Business Mitigation kick-off meeting at Hotel Deca on March 8.
- Participated in various meetings with businesses/ business groups as part of the business mitigation program in Roosevelt.

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# Link Light Rail Northgate Link Extension - Final Design

## Final Design Overview

Sound Transit has executed two key contracts with professional services consultants for the Final Design of the Northgate Link Extension. Jacobs Associates (JA) is providing civil engineering and architectural final design services and was given NTP in October 2010. LTK Engineering Services (LTK) is providing systems engineering final design services and was given NTP in January 2011.

### **Final Design Activities**

<u>Contract Package N111</u> – Advanced Electrical Utility Relocation and Northgate Station Site:

• Continued 60% design effort.

Contract Package N140 - U District Station Civil and Finishes: • Continued development of 90% design package, includ-

 Design effort on hold (at 60%) pending GC/CM procurement.

<u>Contract Package N150</u> - Roosevelt Station Civil and Finishes.

 Design effort on hold (at 60%) pending GC/CM procurement.

<u>Contract Package N160</u> - Northgate Station and Aerial Guideway Civil and Finishes:

- Continued development of alternative schematic roof design.
- Continued with conceptual studies/analysis of Northgate parking garage facility.
- Continued coordination of wetland and stream restoration work areas.

Contract Package N180 - Trackwork

- Conducted constructability session with primary focus on floating slab.
- Continued development of 90% design package, including development of 16Hz floating track slab at U District station.

<u>Contract Package N830 – Traction Electrification, Signals,</u> and Communications:

- Reviewed and responded to VE proposals
- Updating CAD drawings in response to design review comments.

## Final Design Schedule

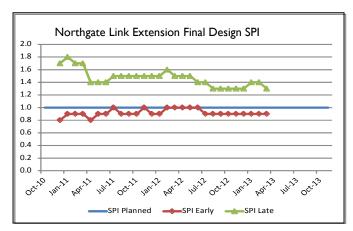
The table below summarizes the current civil Final Design submittal schedule for each contract package.

Work Packages	<u>60%</u>		<u>90%</u>		100% to ST	
work I ackages	<u>Plan</u>	<u>F/A*</u>	Plan	<u>F/A*</u>	<u>Plan</u>	<u>F/A*</u>
NIII Advanced Utility Relocation - Northgate	11/30/2012	2/14/2013	3/29/2013	5/14/2013	7/12/2013	6/28/2013
N125 TBM Tunnels	N/A	N/A	9/6/2012	9/7/2012A	12/10/2012	12/10/2012
N140 U District Station Finishes	12/24/2011	4/27/2012	9/18/2012	11/29/2014	5/10/2013	8/21/2015
N150 Roosevelt Station Finishes	4/13/2012	2/27/2012	1/28/2013	8/6/2014	10/23/2013	4/29/2015
N160 Northgate Sta. Civil/Finishes/Guideway	6/27/2012	10/5/2012	4/17/2013	2/15/2014	11/26/2013	9/8/2014
N180 Trackwork	8/23/2012	8/23/2012	5/22/2013	4/8/2013	8/26/2013	8/9/2013
N830 Traction Electrification. Signals, Comm.	12/12/2012	12/20/2012A	4/10/2014	8/1/2014	12/9/2014	4/15/2015

F/A\* = Forecast/Actual

## Final Design Schedule Performance

For Final Design activities only, the Schedule Performance Index (SPI) reported this period is 0.9 based on the early start dates. The design consultant is meeting all of their design deliverable milestones. Additionally, the late start SPI is 1.4, suggesting that the design activities are progressing in accordance with plans.



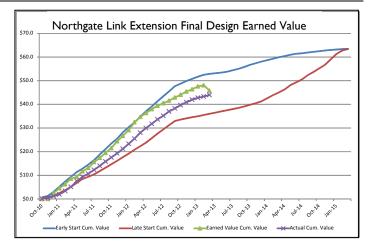
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# Link Light Rail Northgate Link Extension - Final Design



### **Final Design Cost Performance**

JA has submitted 30 progress payments to date in the total amount of \$44.4M, which is approximately 54% of the total contract amount. The percent spent for Final Design activities only is 69%, with a reported percent complete of approximately 72%, resulting in an earned value of \$45.8M. There was a significant drop in CPI for the period due to a reassessment of the progress made on N160 based on numerous requests and comments from Third Parties relating to bicycle and pedestrian access. The cumulative Cost Performance Index (CPI) is currently 1.0, which means the expenditures are at or lower than the earned value. Based on the current CPI trend, final estimated cost is projected to be within or under budget.



Performance	Previous Period	Current Period	Cumulative To Date
Amount Invoiced	\$43,340,842	\$656,098	\$43,996,940
% Spent	68.3%	1.0%	69.3%
Earned Value	\$48,052,973	-\$2,273,470	\$45,779,503
% Complete	75.7%	-3.6%	72.1%
СРІ	1.1	-3.5	1.0

### Other Key Final Design Activities

### Design and Project Integration

- Integration Control Document (ICD) Log: 1 new ICDs were raised, 65 ICDs closed and 36 are open.
- Integration and coordination with Contract N160 artist and Systems design.

## Geotechnical Investigation and Surveying

- Completed revised GDR.
- Analyzed geotech information specific to Weedin Place.
- Continued development of jet grouting plan for ground improvement at Maple Leaf Portal.

### Surveying & Right-of-Way

• Coordinated potholing for 1st Avenue and Weedin Place utility relocation.

#### Permitting and Noise & Vibration Mitigation

- Assisted with U District MUP appeal responses, and Roosevelt noise variance appeal.
- Continued investigation and analysis of floating track slab as it pertains to ground borne noise and vibration.

### Construction Cost Estimating

- Continued investigating cost impact of alternative aggregate sources and configurations for floating track slab.
- Submitted N125 post-100% cost estimate.
- Developed construction cost estimate for Weeding Place.

#### Construction Scheduling

• Commenced development of the N1810 90% construction schedule submittal.

#### **Quality Assurance**

• Commenced QA audits of N180 90% submittal.

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## **Major Construction Contract Packages**

Construction of the Northgate Link Extension consists of eight major construction contract packages: seven civil packages and one combined systems package. Below is a brief scope description for each of these contract packages:

**N110 Utility Relocation at Roosevelt Station Area** - The contract includes relocation of electrical and communication facilities at the Roosevelt Station site.

N111 Utility Relocation at Maple Leaf Portal and Northgate Station Area— The contract includes the relocation of electrical facilities at the Maple Leaf Portal and Northgate Station Areas.

N112 U District and Roosevelt Station Site Preparation - The contract includes the demolition of existing structures, grading and paving at the U District and Roosevelt Station sites.

N125 TBM Tunnels UW Station to Maple Leaf Portal - The contract includes all tunneling work for the project. In addition, this contract provides the support of excavation of station boxes work for the U District and Roosevelt stations.

**N140 U District Station Finishes** - The contract provides the civil and architectural finishes work for the U District Station.

**N150 Roosevelt Station Finishes**— The contract provides the civil and architectural finishes work for the Roosevelt Station.

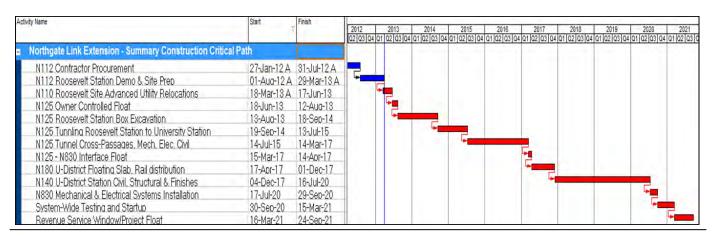
N160 Northgate Station & Elevated Guideway - The contract includes the civil and architectural finishes work for the Maple Leaf Portal, the aerial guideway, and the Northgate Station through Tail Track.

N830 Track Electrification, Signals, Communication System, and Track – The contract includes the installation of the major system elements – Traction Electrification, 26kV Distribution, Signals, and Communications and all Trackwork.

## **Construction Schedule Highlights**

Package	Bid Advertisement	NTP	Substantial Completion	
N110 – Utility Relo at Roosevelt Station	Dec 2012A	Mar 2013A	Jul 2013	
NIII – Utility Relo at Northgate Area	Jul 2013	Jul 2014	Jul 2015	
NII2 – U District & Roosevelt Site Prep	Feb 2012 A	Aug 2012 A	Sep 2013	
NII3 - SCL II5kV Relocate	May 2015	May 2015	Mar 2016	
NI25 – TBM Tunnels	Mar 2013	Sep 2013	Mar 2018	
N140 – U District Station Finishes	Sep 2013 (GC/CM-Precon)	Dec 2017 (construction)	Jul 2020	
NI50 – Roosevelt Station Finishes	Apr 2013 (GC/CM- Precon)	Dec 2016 (construction)	Jul 2019	
N160 – Northgate Station & Guideway	May 2015	Feb 2016	Jun 2019	
N180- Floating Slab & Trackwork	May 2014	Apr 2017– (construction)	May 2019	
N830 – Systems & Track	Nov 2016 (GC/CM)	Nov 2016 (construction)	Oct 2020	

### **Construction Critical Path Schedule**



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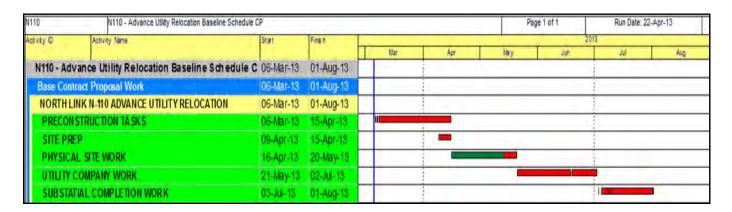
## Contract N110 - Advanced Utility Relocation at Roosevelt Station Area

## **Current Progress**

Notice to Proceed was given to N110– Roosevelt Advanced Utility Relocation on March 6. The contractor, Titan Earthwork, has used the rest of the month to prepare documentation required before they can actually begin field work, e.g. schedule. By month's end they were predicting completion of the submittals and permitting process to be in a position to setting up safeguards such as tree protection, TESC implementation and mobilize by mid-April.

### Schedule / Critical Path

The critical path of this contract involves coordinating with utility owners and trenching in city streets. Immediately behind the trenching will be the setting of vaults and installing conduits for power, telephone and fiber optic utility lines. The Contract provides up to 30-days for Seattle City Light to do its cutover work at the duct bank. When SCL is finished the Resident Engineer will notify the Contractor who will then restore the area.



The Schedule Performance Index (SPI) is not yet available, as there was no budgeted work claimed for this period.

### **Key Activities**

#### Current Period

• No budgeted work accomplished.

#### Next Period

- Document Baseline conditions
- Begin survey and layout.
- Mobilize on-site.
- Begin excavation and new utility installation.

#### Closely Monitored Issues

• Close coordination with utility owners.

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## Contract N112 - U District and Roosevelt Station Site Preparations

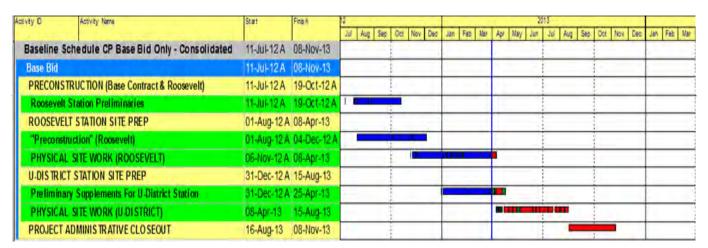
### **Current Progress**

It was a fairly slow period for the Roosevelt and U District Stations site preparation contactor. With the Roosevelt site virtually complete, the work consisted of completing turnover punch-list items. The Roosevelt site is essentially ready for turnover to the to the follow-on tunneling and station excavation contractor which is scheduled to take place in about 5-months.

The U District station site work did not progress this period. Although it is anticipated that the permit problem is resolved, other administrative matters stood in the way of beginning the site work on the scheduled date. The Contractor used this time for preparation and submittal of required documents such as TESC Plan and Traffic Control Plan. By end of this period, it appeared that a solution to the administrative issues was at hand. The Contractor has developed a plan for completing the work on time to avoid any conflicts with scheduled follow on contractors.

### Schedule / Critical Path

Site preparations are part of the overall Northgate Link Extension. The critical path for this contract includes work of minor utilities removal, demolition, removal of debris and any unsatisfactory earthen materials. As each of these steps is completed in a portion of the area, backfilling, grading and paving becomes the critical path to completing the station site. The Roosevelt site is ready for the next contractor (not yet selected). Because Sound Transit had already arranged for a staggered turnover process, the U District Station site prep has more time, and based on its schedule, should be completed and turned over in time so the entire Project can move ahead as planned in the master schedule.

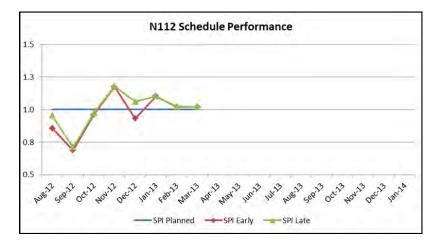


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### **Schedule Performance Index**

The N112 Schedule Performance Index (SPI) is 1.0 this period which indicates that the contract work is trending in accordance with plan.



## **Key Activities**

### Current Period

- Continued minor punch list work related to Notice of Substantial Completion.
- Completed punch list on the Roosevelt site and granted Substantial Completion.
- Processed pay request and change orders.

#### Next Period

- Issue Notice to Proceed for the U District site.
- Demolish and prepare site at U District site.
- Decommission well.
- Take pre-construction photos and building surveys.
- Prep Chase Garage for CDF placement.

### Closely Monitored Issues

- Awaiting right-of-way entry from the University of Washington to access the parking area adjacent to Building A and the old IHOP parking lot.
- MUP for U District is still outstanding.

### **Cost Summary**

Present Financial Status		Amount		
NII2 Contractor - Titan Earthwork				
Original Contract Value		4,444,444.44		
Change Order Value		16,678.79		
Current Contract Value		4,461,123.33		
Total Actual Cost (Amount Billed)		2,124,102.83		
% of Authorized Billed to-date		48%		
Physical Percent Complete:		54%		
Authorized Contingency		444,444.56		
Contingency Drawdown		(16,678.79)		
Contingency Index		14.39		



Chase Garage will be prepared and filled with CDF.

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# Link Light Rail Lynnwood Link Extension

## Scope

The Lynnwood Link Extension entails planning, permitting, design, and construction of an extension of light rail from Northgate to Lynnwood in Snohomish County with service in the cities of Shoreline and Mountlake Terrace. Consistent with FTA New Starts requirements, the project has undergone an alternative analysis, completed in the 3rd QTR 2011, and Environmental Scoping, completed in the 4th Quarter 2011. The development of the draft environmental impact statement (DEIS) and conceptual engineering of the DEIS alternatives started in January 2012. The Sound Transit Board identified the route and station alternatives to study in the DEIS in April 2012.

## Key Project Activities/Issues

- Continued working on DEIS for Q2 2013 publication.
- Performed initial cost Risk Assessment.



Map of Lynnwood Link Extension route and station alternatives.

## **Project Cost Summary**

The Lynnwood Link Extension is currently funded through the completion of preliminary engineering (PE) and environmental documentation. Board approval for additional funding for final design and construction will be sought upon completion of PE. Table (below) figures in millions.

Phase	Adopted Budget	Commit- ment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$10.7	\$2.5	\$2.5	\$8.3	\$10.7	\$0.0
Preliminary Engineering	\$44.3	\$19.1	\$13.3	\$25.2	\$44.3	\$0.0
3 <sup>rd</sup> Party Agreements	\$1.0	\$0.3	\$0.0	\$0.7	\$1.0	\$0.0
Right of Way	\$1.1	\$0.1	\$0.0	\$1.0	\$1.1	\$0.0
Total	\$57.I	\$21.9	\$15.9	\$35.2	\$ <b>57.</b> I	\$0.0

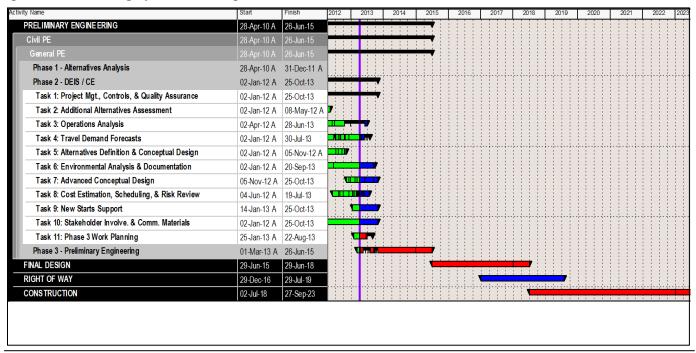
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# Link Light Rail Lynnwood Link Extension



## **Project Schedule**

The Lynnwood Link Extension, environmental documentation and preliminary engineering is anticipated to be completed in 2015. The project schedule is presented below.



# **Sound Transit Board Actions**

Motion Number	Description	Date
	None to report this period.	

#### **Environmental**

• Work on the Environmental Impact Statement is underway.

# **Community Outreach**

- Provided a project briefing to the leadership group of the Latvian Lutheran Church with approx. 24 church leaders present to hear an updated on the project including the upcoming release of the DEIS in June.
- Provided project briefing Victory Heights Community Council and inquired about construction impacts, final route and stations, parking and project cost and funding.
- Provided a briefing to the Haller Lake Community Council and 40 members attended and inquired about the project including station, ridership estimates, and travel times.
- Preparing to mail out the project newsletter targeting 80,000 residents in the planning corridor. Newsletter to start reaching homes around first week of April and an electronic version will be emailed to the subscription list on April 8.

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# Link Light Rail Lynnwood Link Extension - Conceptual Eng. & DEIS

## Phase 2 - Conceptual Engineering and DEIS Overview

Sound Transit executed a professional services agreement with North Corridor Transit Partners (NCTP) for civil engineering and architectural design services in April 2010. Sound Transit issued NTP for Phase 2, Conceptual Engineering and DEIS for the Lynnwood Link Extension in January 2012.

# **Key Phase 2 Activities**

- Continued forecast model update, analysis, and documentation activities.
- Continued work on draft EIS sections and technical reports.
- Further developed advanced conceptual design, including alternative station and bridge options, changes to existing infrastructure, and tech memo development.
- Continued work on DEIS Capital Cost Estimates for all alternatives and risk assessment methodology.
- Continued reviewing FTA guidance on changes to New Starts requirements.
- Prepared graphic materials for stakeholder meetings and coordinating with local jurisdictions.

### Phase 2 Schedule Performance

Change Order 006 was executed in October, addressing changes to the FTA's New Starts approval process. This change order reduced the Phase 2 schedule and re-scoped deliverables, triggering a revision to the performance management baseline. The Schedule Performance Index (SPI) trends at 1.09 through March against the revised baseline. All Phase 2 design deliverable milestones have been met and the project is on schedule to complete Phase 2 work in Q3 2013.

## **Phase 2 Cost Performance**

\$13.0 M of the total contract amount, approximately 72%, has been spent through March. Phase 2 invoices through March total \$8.2M, approximately 62% of the Phase 2 contract amount. The Phase 2 percent complete reported at the end of March is 70%, resulting in an earned value of \$9.2M. The cumulative Cost Performance Index (CPI) is 1.13, which means that the expenditures are lower than the earned value. Based on the current trend, final cost is expected to be within or under budget.



Phase 2 Performance	Previous Period	Current Period	Cumula- tive To-date
Amount Invoiced	\$6,902,631	\$1,309,118	\$8,211,748
% Spent	52%	10%	62%
Earned Value	\$7,812,504	\$1,441,039	\$9,253,543
% Complete	59%	11%	70%
SPI	1.10	1.00	1.09
CPI	1.13	1.10	1.13

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# Scope

East Link extends light rail to East King County via I-90 from Downtown Seattle to Downtown Bellevue and the Overlake area of Redmond, with stations serving Rainier Avenue/I-90, Mercer Island, South Bellevue, Downtown Bellevue, Overlake Hospital, the Bel-Red corridor, Overlake Village and the Overlake Transit Center (OTC). Environmental review for a future expansion between the Overlake Transit Center and Downtown Redmond has also been completed. Preliminary engineering has been completed; the project is in Final Design. Revenue Service to the Overlake Transit Center is forecast for 2023.



## **Key Project Activities/Issues**

### <u>I-90</u>

- Seismic Retrofits for Fixed Spans: Prototype Analysis for the West Approach Structure and Basis of Design (BOD) sent to WSDOT for comment.
- *Center Roadway, D2*: Completed field work during two weekend closures (survey; pavement coring, sub-base testing; floating bridge ballast survey; noise and vibration study); initiated analysis of gates, signals and safety features on D2 for bus at-grade crossing.
- Wind and Wave Analysis: Floating Bridge workshop (second) held to determine input and evaluation criteria; OCS (Overhead Catenary System) Pole lay-out submitted.
- *Track Attachment*: Concrete Alternate Plinth memo submitted to ST.
- *Tunnels*: Developed options for ventilation and egress.
- Stations: Review of Rainier Ave West Entrance (on-going); alternative elevation Noise Impact review for Mercer Island Station.
- *R8A:* Review of Stage 3A 90% Plans for impact on East Link I-90 and Bel-Red near Segment Interface.

#### Bellevue-Redmond

- Bellevue Cost Savings: Continued to work with the City of Bellevue on cost-savings ideas. Anticipate Council action in April.
- Downtown Bellevue Tunnel: Held review meeting on draft SEM (Sequential Excavation) report.
- 520 Coordination with WSDOT: Meeting held on March 26 to begin discussing process for air space lease, design documentation approval, and possible interface with future WSDOT projects.
- *Growing Transit Communities*: Attended PSRC's East Corridor Task Force meeting to finalize review of draft implementation strategies to provide affordable housing in transit station areas.
- Bel-Red Project Coordination: Attended ongoing monthly meeting w/ Bellevue, Wright Runstad and Pine Forest project teams.
- Bel-Red Stations: Held ongoing cost savings meetings.
- Overlake Village Bridge Project: ST and Redmond attorneys to finalize revisions to the draft Overlake Pedestrian Bridge Agreement.
- OTC Agreement Negotiations: Continued negotiations with Microsoft and the City of Redmond.

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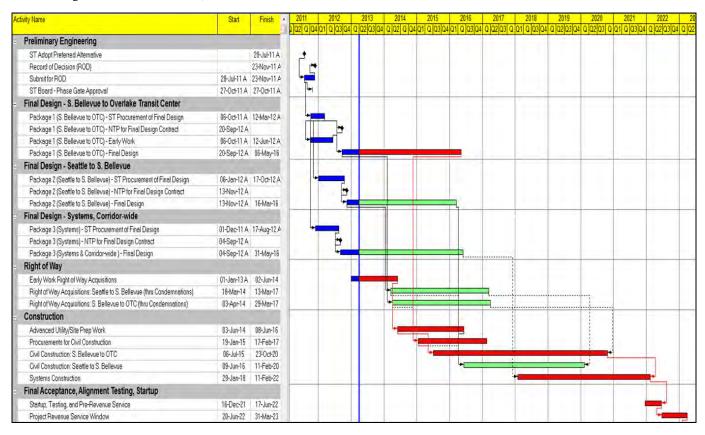
## **Project Cost Summary**

The following table summarizes the cost information for the East Link Extension. Lifetime Budget reflects the project budget adopted by Sound Transit Board, which includes budget through the Final Design Phase. (Figures in millions.)

	Lifetime Budget	Commit- ment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget vs. EFC
Administration	\$66.5	\$15.9	\$16.2	\$50.6	\$66.5	\$0.0
Preliminary Engineering	\$61.1	\$54.4	\$54.2	\$6.8	\$61.1	\$0.0
Final Design	\$223.7	\$144.1	\$19.5	\$79.5	\$223.7	\$0.0
3rd Party Agreements	\$40.1	\$3.8	\$1.5	\$36.2	\$40.1	\$0.0
Right-of-way	\$365.4	\$15.8	\$14.9	\$349.6	\$365.4	\$0.0
Total	\$756.8	\$234.1	\$106.3	\$522.8	\$756.8	\$0.0

# **Project Schedule**

The East Link Extension is in Final Design. Revenue Service to the Overlake Transit Center is forecast for 2023. The Final Design for S. Bellevue to Overlake Transit Center NTP was given on September 20, 2012. The Final Design for Corridor-wide Systems NTP was given on September 4, 2012. The Final Design for Seattle to South Bellevue (I-90) NTP was given on November 13, 2012.



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# **Quality Assurance Activities**

#### Activities

 Seattle – S. Bellevue - Reviewed and approved Final Design Quality Manual.

#### Issues

• None to report.

## **Environmental**

• Issued SEPA Addendum to address potential refinements in Bellevue, including updated information in Redmond. In Bellevue, the refinements are the result of the Cost Savings effort. In Redmond, they are due to potential SR 520 pedestrian bridges and noise analysis updates.

### **Sound Transit Board Actions**

Motion Number	Description	Date
M2013-10	Execute a contract amendment with H-J-H Final Design Partners, a joint venture of HNTB Corporation, Jacobs Engineering Group, Inc. with Hatch Mott MacDonald, for design services of the Overlake Village Bridge Project in the amount of \$1,822,585, for a total authorized contract amount not to exceed \$89,622,585.	Mar 28
M2013-09	Execute an agreement with the City of Redmond for the design of the Overlake Village Bridge Project.	Mar 28
R2013-04	Amending the Adopted 2013 Budget to create the Overlake Bridge Project in Redmond and adopting (a) the 2013 Annual Project Budget of \$728,000 and (b) endorsing the Project Lifetime Budget in the amount of \$1,898,000 and (2) approving Gates 1 through 4 within Sound Transit's Phase Gate Process.	Mar 28

# **Community Outreach**

- Hosted the Bel-Red Final Design Kick-Off Open House at Highland Community Center.
- Continued notification of City of Bellevue and affected businesses about upcoming survey, geotech work & wetland work.
- Coordinated Cost Savings Open House with City of Bellevue staff.
- Worked with Environmental and Real Property to mail potentially affected parcel letters to all SEPA-Addendum

  identified properties.
- Coordinated ROE request advance notifications with Real Property for Mercer Island noise and vibration testing.
- Attended/held various meetings/briefings/ presentations: Eastside Easy Riders Coalition, Bellevue Downtown Association, Redmond Neighborhood Network, STArt East Link Artist Workshop, Surrey Downs neighborhood, and WSDOT.

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# Link Light Rail East Link Extension Final Design - S. Bellevue to OTC

## Final Design Scope

Final Design for the East Link Extension is delivered by three major design contracts: two for civil improvements and one for systems improvements. This civil contract is for the design services from South Bellevue to the Overlake Transit Center (OTC). The contract was awarded to H-J-H Final Design Partners, a joint venture of HNTB Corporation, Jacobs Engineering Group, Inc., and Hatch Mott MacDonald.

The scope of services include detail design of the corridor, preparation of comprehensive construction contract documents, permit support, survey, geotech investigations, right-of-way planning, third party coordination, systems coordination, cost estimating, scheduling, sustainability report, bid support and community outreach.

The project in this segment has been grouped into four Contract Packages: (1) E320 So. Bellevue: I-90 to Main Street; (2) E330 Downtown Bellevue: Tunnel to BNSF Touchdown; (3) E340 Bel-Red: BNSF Touchdown to SR -520, and (4) E360 SR-520 to OTC.



Map of South Bellevue to the Overlake Transit Center in Redmond.

## Final Design Key Activities

- Continued bi-weekly design integration meetings.
- Continued geotechnical exploration & field surveying.
- Continued preparing preliminary draft specifications sections list and template.
- Compiled a drawing list of standard plans for all disciplines & began production on standard plan drawings.
- Updated Cost Savings Ideas cost estimates.
- Developed 3D model animation of the alignment and stations.

#### E320 So. Bellevue

- Continued development of East Main and South Bellevue Stations toward 30%.
- Continued design on roadways, access drives, drainage, utilities, and structures.
- Continued work on Fire safety ventilation study of lidded structure on 112th Ave SE.
- Continued development of S. Bellevue Station and Park <u>E360 SR 520 to OTC</u> and Ride structure.
- Began preliminary design for noise wall locations.

#### E330 Downtown Bellevue

- Continued inter-discipline coordination efforts related to E320 interface, I-405 Crossing, & Station interfaces.
- Continued development of Bellevue Transit Center Station and Hospital Station toward 30%.

- Completed work on the SEM study for the downtown Bellevue tunnel versus using the cut and cover method. Report was submitted to the City of Bellevue.
- Continued coordination with WSDOT re. long span over I-405 on the south side of NE 6th.
- Worked with the City of Bellevue regarding traffic channelization.

#### E340 Bel-Red

- Began roadway design of NE 16th/136th Pl NE Corridor, and constructed VISSIM model network for instreet LRT running.
- Set span arrangement, column locations and abutment locations. Selected pre-stressed girders as structure type.
- Track design for embedded track on 16th from 130th to
- Continued development of stations toward 60%.

- Continued concurrence process with Redmond, including design concurrence drawings. Complete concept sketches for Microsoft fiber optic relocation.
- Continued developing design build for E360.
- Continued 520 project interface coordination with WSDOT.
- Began developing work plan, schedule, etc. to establish milestones and WSDOT/ST interface points needed for Design-Build (DB) procurement/project delivery.

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### **Final Design Schedule**

Due to delays in obtaining rights of entry to conduct surveys and geotechnical explorations, the submittals forecast dates have slipped from the baseline dates. Over the previous period, the consultant had analyzed the schedule and implemented a workaround to recover most of the schedule. However, the E340 contract 60% submittal is still about a month behind schedule. The E360 contract is currently scheduled as a design-bid-build procurement. Schedule is showing a large slippage due to no design is being progress, because the contract is being converted to a design-build procurement.

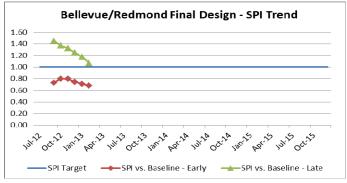
	60% S	6 Submittal 90% Submittal 100% Submittal		90% Submittal 100% Submittal		100% Submittal		<u>bmittal</u>
Contract Packages	Baseline	Forecast/ Actual	Baseline	Forecast/ Actual	Baseline	Forecast/ Actual	Baseline	Forecast/ Actual
E320 So. Bellevue: I-90 to Main St.	9/30/2013	9/30/2013	7/2/2014	7/2/2014	11/18/2014	11/18/2014	2/27/2015	2/27/2015
E330 Downtown Bellevue: Tunnel to BNSF Touchdown	8/21/2013	8/22/2013	5/27/2014	5/27/2014	10/8/2014	10/8/2014	1/15/2015	1/15/2014
E340 Bel-Red: BNSF Touch- down to SR-520	7/15/2013	8/19/2013	4/16/2014	4/22/2014	9/3/2014	9/3/2014	12/15/2014	12/15/2014
E360 SR-520 to Overlake Transit Center	10/9/2013	1/6/2014	6/5/2014	8/28/2014	10/13/2014	1/8/2015	3/4/2015	5/1/2015

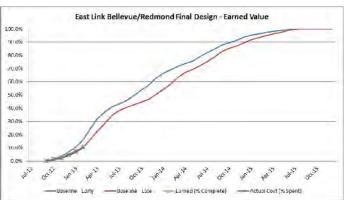
### Final Design Schedule Performance

Excluding Other Direct Expenses (ODC's), Profits and Design Services During Construction (DSDC), the Schedule Performance Index (SPI) reported this period is 0.68 when measuring against the Early Schedule Baseline, and 1.07 when measuring against the Late Schedule Baseline. Schedule shows some upfront slippage due to delay in obtaining Right-of-Entries to conduct surveys and geotechnical borings.

## **Final Design Cost Performance**

Total cost (for Phase 2 Final Design) to-date is \$8.4 million, or 10.3% of the contract amount. Progress earned through the same period is approximately 10.9% or \$8.8 million of earned value. This yields a cumulative Cost Performance Index (CPI) of 1.1, which indicates better-than-planned cost efficiency. However, it is still too early at this time to establish a trend for cost efficiency. Thus, cost at completion is forecast to equal to budget at this time.





Performance	Performance Previous Period		Cumulative To Date	
Amount Invoiced	\$5,748,4165	\$2,602,228	\$8,350,393	
% Spent	7.1%	3.2%	10.3%	
Earned Value	\$6,156,000	\$2,673,000	\$8,829,000	
% Complete	7.6%	3.3%	10.9%	
СРІ	1.1	1.0	1.1	

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# **Link Light Rail** SOUNDTRANSIT East Link Extension Final Design - Seattle to S. Bellevue



Map of International District Station to South Bellevue.

## **Final Design Scope**

Final Design for the East Link Extension is delivered by three major design contracts: two for civil improvements and one for systems improvements. This civil contract is for the design services from International District Station (IDS) to South Bellevue. The contract was awarded to Parsons Brinkerhoff, Inc.

The scope of the services include detail design of the corridor, preparations of comprehensive construction contract documents, permit support, survey, geotech investigation, right-of-way planning, third party coordination, systems coordination, cost estimating, scheduling, sustainability report, bid support and community outreach support.

The project in this segment has been grouped into four Contract Packages: (1) E110 Rail Connection and Upgrades at IDS, (2) E120 Seismic Retrofits of WSDOT Structures, (3) E130 I-90 Civil/Architectural, which also includes the two at-grade stations, and (4) E140 Electrical/Mechanical Upgrades to the Tunnels.

## Final Design Key Activities

- Finalized WSDOT work plans.
- Geotechnical data gap analysis and supplemental site investigation have been reviewed by WSDOT.
- Track attachments memos have been prepared for both a CIP concrete option and a fiberglass reinforced composite option. Workshop has been scheduled for April.
- Mercer Island Station: Started advancing the station design concepts (same as PE) with refinements. Acoustic study has been prepared and a meeting with Mercer Island has been scheduled for April. 30% submittal is on target for April 16.
- Rainier Avenue Station: Assessment of East and West Entrances has been prepared East entrance alternative from PE is being advanced in conjunction with platform. West entrance on hold pending D-2 busway configuration. A structural evaluation has been ordered to assess bridge deck removal for the north side flyer stop bridge.
- Tunnels: Ventilation Options for both Tunnels have been developed (modeled/calculated). Meetings with ST Operations and Safety has been scheduled for Early April; Egress for both Tunnels has been developed and will be discussed with the Fire Department once ST has reviewed its options.
- Floating Bridge: Basis of Evaluation has been advanced, track attachment and OCS pole concept relevant to the evaluation have been advanced. Wind and Wave Analysis Consultant continued to be engaged in workshop to determine evaluation criteria and model input. Analysis scheduled to start mid-April.
- Fixed Spans: Basis of Design has been prepared, Prototype Level 1 analysis for West Approach continues to be advanced for April 17 delivery completion to WSDOT.
- Permits: Permit review has started. A permit meeting has been scheduled for April 1.
- Fieldwork for survey, ballast survey and vibration and testing has been conducted.

Final Design Cost and Schedule for the Seattle to So. Bellevue contract is not available at this time.

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# Link Light Rail East Link Extension Final Design - Systems



## **Final Design Scope**

Final Design for the East Link Extension is delivered by three major design contracts: two for civil improvements and one for systems improvements. This contract is for the systems design services for the entire alignment. The contract was awarded to LTK Engineering Services, Inc.

The scope of the services include detail design of the corridor, preparations of comprehensive construction contract documents, third party coordination, cost estimating, scheduling, and bid support.

## Final Design Key Activities

- Sound Transit approved the East Link Systems Design Project Management Plan, Design to Budget Plan and Construction Cost Estimating Plan.
- Coordinating wayside Systems elements with Civil Design Team including signals, duct banks, OCS overlaps and traction electrification equipment.
- Completed the East Link Traction Electrification simulations incorporating; new sites; and changes to track plan and profile.
- Incorporating ST and WSDOT comments to design criteria for stray current system on I-90 floating bridge.
- Incorporating ST and WSDOT comments to the Stray Current Work Plan for the I-90 floating bridge.
- Finalizing OCS grounding concept for the I-90 floating bridge.
- Integrating communications equipment with the 120th Street and 130th Street station architectural teams in preparation for the E340 60% submittal.
- Finalizing utility corrosion control requirements with the City of Bellevue.
- Coordinating Train Signal system and equipment with civil project engineers and traffic control engineers.
- Coordinating TPSS wayside site layouts and access with ST Operations and civil project engineers.

Final Design Cost and Schedule for the Systems contract is not available at this time.

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## Scope

The S. 200th Link Extension is a 1.6-mile extension of light rail from the SeaTac/Airport Station to South 200th Street. After leaving SeaTac /Airport Station, the elevated route continues along the west side of International Blvd., turns southwest to cross South 188th Street, and continues along the east side of 28th Avenue South to an elevated station at South 200th Street sized to accommodate 4-car trains. A bus transfer facility, kiss and ride parking, and a 700 space structured park and ride facility will be located at the South 200th Street station. Up to 400 additional spaces will be constructed on Sound Transit property for use while the South 200th Street Station is an interim southern terminus of the Link system.

The project is being delivered through a design/build approach to accelerate project completion by September 2016.



Map of S. 200th Link Extension.

# **Key Project Activities/Issues**

- Submitted the Capital Projects Advisory Review Board (CPARB) application to Washington State on March 29 for Design Build Parking Garage (S445).
- S445 Project Requirement documents in review with key project staff.
- Briefed Board Member Julia Patterson on project progress, parking, plaza and development ideas.
- Presented the Sound Transit experience on procuring first Design Build contract to Northwest DBIA.
- Finalized ROW acquisitions; all on schedule to be delivered prior to construction.
- Executed PSE Task Order 2 agreement for Advanced Utility Relocation work.
- Finalizing PSE Task Order 3 agreement for design of permanent utility relocation work finalized and awaiting signature by both parties.
- Several design packages of 50% and 100% were submitted by S440 contractor for review by ST, POS and City of SeaTac
- Port of Seattle (POS) Early Utility Relocation Contract began field operations.
- Column A14 redesign to accommodate revised future ground elevations will be costly. Alternatives presented to POS.

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# **Project Cost Summary**

The S. 200th Link Extension project cost is summarized in two cost tables. The first table in in accordance with Sound Transit's Work Breakdown Structure (WBS), and in the second table, cost is summarize in accordance to the FTA's Standard Cost Categories (SCC) format. (Both tables' figures in millions).

WBS Phase Elements	Baseline Budget	Current Adopted Budget	Commit- ment to Date*	Incurred to Date	Est. Final Cost (EFC)	Adopted Budget vs. EFC
ADMINISTRATION	16.1	15.9	5.0	5.2	15.9	0.0
PRELIMINARY ENGINEERING	5.9	5.7	5.7	5.7	5.7	0.0
FINAL DESIGN	20.0	6.8	6.3	4.4	6.8	0.0
CONSTRUCTION SERVICES	15.1	17.3	15.0	0.9	17.3	0.0
3rd PARTY AGREEMENTS	6.9	7.1	5.5	2.4	7.1	0.0
CONSTRUCTION	275.7	286.9	175.3	17.5	286.9	0.0
VEHICLES	0.0	0.0	0.0	0.0	0.0	0.0
ROW	43.5	43.5	24.8	15.8	43.5	0.0
Capital Total	383.2	383.2	237.5	51.9	383.2	0.0
FINANCE COST						
Project Total	383.2	383.2	237.5	51.9	383.2	0.0

The March 2013 projected Estimated Final Cost (EFC) continues to be consistent with the baseline amount of \$383M. The incurred cost for this period increased approximately by \$4.2M, which mostly accounts for construction expenditures (88%) generated by the design build contractor for guideway and station (S440) activities.

The construction EFC under the SCC format overall is consistent with the baseline budget. The increase of incurred cost of \$4.2M for this period is mostly attributed to the S440 contract and those expenditures are design related appearing under the Professional Services SCC format 80.

Project Elements by SCC	Baseline Budget	Current Adopted Budget	Commit- ment to Date*	Incurred to Date	Estimated Final Cost (EFC)	Adopted Budget vs. EFC
10 Guideway & Track Elements	144.8	137.4	97.4	3.0	126.5	10.9
20 Stations	46.4	48.9	12.4	0.4	45.9	3.0
30 Support Facilities: Yards, Shops	0.0	0.0	0.0	0.0	0.0	0.0
40 Sitework & Special Conditions	34.6	49.6	32.0	2.6	58.0	-8.4
50 Systems	30.8	19.8	18.5	0.6	25.3	-5.5
Construction Subtotal (SCC 10-50)	256.6	255.7	160.3	6.6	255.6	0.0
60 Row, Land, Existing Improvements	43.5	43.5	24.8	15.8	43.5	0.0
70 Vehicles	0.0	0.0	0.0	0.0	0.0	0.0
80 Professional Services	64.1	67.3	52.4	29.5	68.1	-0.8
90 Unallocated Contingency	19.0	16.7	0.0	0.0	15.9	0.8
Project Total (SCC 10-90)	383.2	383.2	237.5	51.9	383.2	0.8
100 Finance Cost				_	_	
Project Total (SCC 10-90)	383.2	383.2	237.5	51.9	383.2	0.0

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## **Cost Contingency Management**

The overall project contingency balance as of March, reflects a balance of \$145.2M or 38% of the project (see tables below).

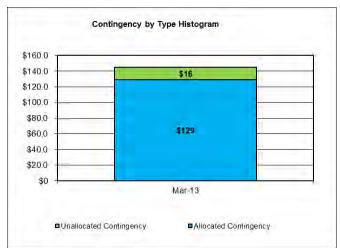
<u>Design Allowance (DA):</u> After baselining the project the design allowance of \$26.7M was added to the base estimate for the design build work package. There will be no future reporting of DA.

<u>Allocated Contingency (AC)</u>: The AC is currently at \$129.3M compared to BCE. Although change orders activity continues to draw down on this contingency, the AC of the remaining amount has increased as a result of transfer of design allowance (\$27M), the surplus difference between the estimate and DB contract bid (\$46M), and other reallocation of budget elements.

<u>Unallocated Contingency (UAC)</u>: The UAC balance of \$15.9M is lower than BCE by 4%.

0 11	В	CE	Current Status		
Contingency Status	Amount	% of Total	Remaining Amount	% Remaining Work	
Design Allowance <sup>1</sup>	\$26.7	7.0%	\$0	0.0%	
Allocated Contingency	\$29.8	8.0%	\$129.3	34.0%	
Unallocated Contingency	\$19.0	5.0%	\$15.9	4.0%	
Total:	\$75.5	20.0%	\$145.2	38.0%	





# **Project Schedule**

The S. 200th Link Extension anticipated service launch is September 2016. (See Project Schedule Summary in the following page).

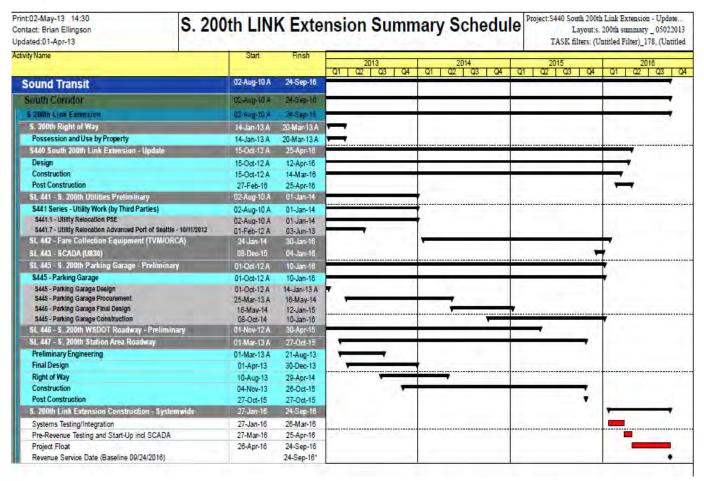
The project is currently in Final Design under the S440 Design-Build Guideway & Station contract. The Notice to Proceed for that contract was given on October 15, 2012. PCL and the designer HDR along with the Sound Transit Construction Management Team have mobilized on site. The groundbreaking ceremony is scheduled next period. Design and equipment procurement is underway.

The S445 Parking Garage contract is planned for procurement starting in 2nd QTR 2013.

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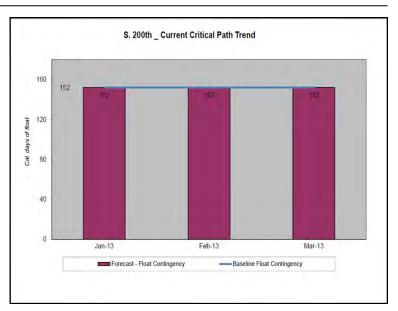
# Project Schedule, cont.



## **Critical Path**

The critical path of S. 200<sup>th</sup> Link Extension runs through S440 which commences with the procurement of the guideway erection truss, guideway erection, alignment, post tension and drainage, plinth and track installation, signal and systems and concludes with system wide testing and integration.

Float contingency is at 152 days.



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# Right-of-Way

The S. 200<sup>th</sup> Link Extension involves the acquisition of a range of property interests, including owner and tenant residential and commercial relocations. Property interests include compensable (e.g., easements, fee acquisitions) and noncompensable rights (e.g., rights of entry). The right-of-way program is summarized below.

Line Section	Total Parcels Certified	Of- fers Made	Signed Agree- ments	Admin. Settle- ments	Posses- sion and Use	Closings to date	Baseline Relocations Required	Relocations Completed
S. 200th Link	61	56	11	0	23	13	6	1

The S. 200th Link Extension project involved the advance acquisition of three parcels that the Board approved in April 2006 and June 2007; the final decree was entered in July 2009. These parcels were acquired through the Regional Fund Contingency. Sound Transit's protective acquisition of these properties prevented development of parcels needed for the project. The acquisition of property rights from an additional 52 parcels along the route was authorized by the Board in July 2011. On February 23, 2012 the Board authorized the acquisition of property rights from an additional six parcels along the route.

The Port of Seattle commissioners approved the Memorandum of Agreement (MOA) for use of Port property. The Sound Transit Board approved the MOA on June 28, 2012.

Offers have been made on 56 parcels. A total of 33 parcels have now been submitted for condemnation and 32 parcels have been filed in court. The condemnation on the remaining parcel has been dismissed. ST has been granted Possession and Use though the court for 23 parcels. Sound Transit has taken physical possession of four parcels, although relocation efforts continue and are not complete.

# **Quality Assurance Activities**

#### **Activities**

- S440 Issued RFD S440-01 (ATC 4), with MRB for approval, to modify Column Reinforcing Embedment into Shaft.
- S445 Reviewed and provided comments on Quality Management Requirements for the Project Requirements for the RFQ and RFP

#### <u>Issues</u>

• None to report.

#### **Summary**

Description	Mar 2013	Notes
No. of Audits Planned	3	S440- Substructure A 50%, Highline Water Utilities 100%, Midway Sewer Utilities 100%
No. of Audits Completed	3	S440- Substructure A 50%, Highline Water Utilities 100%, Midway Sewer Utilities 100%
Reports in Progress	0	None
No. of Audits Postponed	0	None

# **Community Outreach**

 Continued coordination and preparation for the upcoming Open House.

## **Sound Transit Board Actions**

Motion Number	Description	Date
	None to report.	

#### **Environmental**

• None to report at this time.

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# **Contract Packages**

The South 200<sup>th</sup> Link Extension consists of two major contract packages, both by Design Build methods, and two minor contracts. Below is a brief scope description of each package. More detailed information for each contract will be provided on the following pages upon commencement of construction.

- **S440 Design Build Guideway and Station** This contract involves the design and construct of an elevated guideway (1.6 miles) and station, site work, civil /roadwork, and systems. See S440 contract page for detailed information on the following page.
- **S445 Design Build Parking Garage and Plaza** This contract involves the design and construction of a parking garage (700 space structure), passenger pick-up and drop-off lot, plaza area, retail space and surface parking.
- **S446 Military Road & South 200**<sup>th</sup> **Street Improvements** This contract package consists of construction of roadway and traffic signals work.
- **S447 Station Area Roadways & Surface Parking-** This contract package consists of station area roadway, surface parking, and non-motorized Improvements (sidewalks, traffic signals, pedestrian/bicycle connection, roadwork).

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# Link Light Rail S. 200th Link Extension – Design Build

# S440 Contract—Design Build (Guideway and Station)

## **Current Progress**

PCL and the designer HDR along with the Sound Transit Construction Management team have mobilized on site. The groundbreaking ceremony is expected next period. Design and Equipment procurement is well underway.

Physical % Complete is currently 7.5%.

## **Critical Path**

The critical path commences with the procurement of the guideway erection truss, guideway erection, alignment, post tension and drainage, plinth and track installation, signal and systems and concludes with system wide testing and integration. Design submittals and production rates will be monitored closely.

rvity Name	Start	Finish					_				_				_	
			01		13	04	Q1		Q3	1 04	01		2015	3 0	1 0	2016
S440 South 200th Link Extension - Update	28-Sep-12 A	25-Apr-16	-	42	G,	- Gr	4.	42	1 40	1 4		1 4.	1 4.	, , ,	-	-
Milestones	28-Sep-12 A	25-Apr-16	_			-				_	+	_			+	-
Project Float - Systems	25-Feb-16	25-Feb-16													. 9	1
Sound Transit Milestones	28-Sep-12 A	25-Apr-16	-			-	_			_	+	_			+	_
Notice of Award	28-Sep-12 A															
St MS 01 - S440 Notice to Proceed	15-Oct-12 A															
ST MS 02 - Inform ST of minimum height for PSE line over 188th	1	13-Nov-12 A														
ST MS 03 - Turnover Parking Garage Site to Parking Garage Contractor (724 from NTP) (10/8/14)		08-Oct-14*														
ST MS 04F - Station Commissioning (60 calendar days prior to rev service)(2/25/16)		09-Jun-15*											•			
ST MS 06F - Utility Commissioning (90 calendar days prior to rev service)(1/26/16)	1	15-Jun-15"														
ST MS 05F - Guideway Commissioning (180 calendar days prior to rev service)(10/28/15)		03-Jul-15*					li I									
Sound Transit Controlled Float (Before Guideway commissioning)	27-Sep-15	27-Oct-15														
ST MS 07F - Systems Commissioning (60 calendar days prior to rev service)(2/25/16)		25-Feb-16*													4	
ST MS 10F - Achieve S440 Substantial Completion (3/25/16)		14-Mar-16*														•
ST MS 09F - Complete S440 Systems Testing and Integration (3/25/16)		25-Mar-16*														
ST MS 11 - Start 30 Day Pre-Revenue Testing - ST Running Trains (3/26/16)	26-Mar-16*															
ST MS 13 - South Link Contract Work Complete; Achieve Acceptance & Warrantes Begin (4/24/16)		25-Apr-16*														
ST MS 12 - End Pre-Revenue Testing - ST Running Trains (4/24/16)		25-Apr-16*														
General Milestones	17-Nov-12 A	26-Dec-15	-			-				_	+				-	
Design	15-Oct-12 A	12-Apr-16										_				_
Construction	15-Oct-12 A	14-Mar-16								_	1				_	•
Post Construction	27-Feb-16	25-Apr-16													7	$\overline{}$

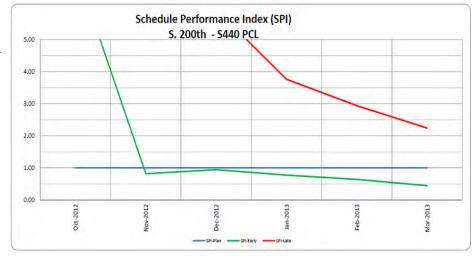
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# **Link Light Rail** S. 200th Link Extension - Design Build



## Schedule Performance Index

The SPI is currently reporting below a 1.00 at 0.4 due to a delay in mobilization payment. In addition, there were start-up delays at the casting yard. The project team is closely monitoring the trends.



### **Key Activities**

### Current Period

- Continued weekly meetings at the project field office.
- Continued review of several 50% and 100% design packages.
- Port of Seattle advanced utility relocation work continues Continue setup of Casting Yard. and expected completion by the end of May.
- Continued setup for Casting Yard in Enumclaw (precast segments expected to begin in June/July).
- Sound Transit and DB participated in joint audits of design packages.

#### Next Period

- Continue Task Force, Design Coordination and over- the -shoulder review meetings.
- Design Packages anticipated for submission are City of SeaTac Utility Plans, Superstructure, Demolition, Systems, and Substructure

#### **Closely Monitored Issues**

• None to report.

## **Cost Summary**

Present Financial Status	Amount
S440 Contractor—PCL Civil Contractors, Inc.	
Original Contract Value	\$169,000,000
Change Order Value	\$508,206
Current Contract Value	\$169,508,206
Total Actual Cost (Amount Billed)	\$12,648,675
% of Authorized Billed to-date	7%
Physical Percent Complete:	7%
Authorized Contingency	\$13,520,000
Contingency Drawdown	\$508,206
Contingency Index*	2.0



Duct bank relocation continues.

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# Link Light Rail Federal Way Transit Extension

## Scope

The scope of work for this project includes Alternatives Analysis, followed by a Draft and Final Environmental Impact Statement leading to Sound Transit Board adoption of the project and FTA issuance of a Record of Decision in 2016. The project will also include conceptual engineering design to support the environmental analysis.

In addition to advancing the engineering design of the project sufficient to obtain a Record of Decision, design of the preferred alternative will be advanced through preliminary engineering for the initial 2.3-mile segment from South 200<sup>th</sup> Street to Kent/Des Moines. This will prepare this segment of the project for final design and construction, with anticipated revenue operations in 2023. Although not part of the initial scope, Sound Transit may exercise options to extend the scope of preliminary engineering south of Kent/Des Moines to South 272nd Street or the Federal Way Transit Center.

This project is updated quarterly.

## **Key Project Activities/Issues**

- HDR continues work on the Phase 1 contract for Alternatives Analysis.
- Addressed comments on Level 1 alternatives screening report and preparing Level 2 report.
- Preparing to select DEIS alternatives in September 2013.



Map of Federal Way Transit Extension project area.

# **Project Cost Summary**

The Federal Way Transit Extension project is currently funded through the completion of preliminary engineering (PE) and environmental documentation from S. 200th to Kent/Des Moines and for environmental documentation from Kent/Des Moines to Federal Way. Board approval for additional funding for final design and construction of S. 200<sup>th</sup> St. to Kent/Des Moines and for preliminary engineering of Kent/Des Moines to Federal Way to will be sought upon completion of funded work. Table (below) figures in millions.

Phase	Adopted Budget	Commit- ment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$9.4	\$0.6	\$0.6	\$8.8	\$9.4	\$0.0
Preliminary Engineering	\$30.9	\$3.2	\$1.9	\$27.7	\$30.9	\$0.0
Third Party	\$1.6	\$0.0	\$0.0	\$1.6	\$1.6	\$0.0
Total	\$41.8	\$3.8	\$2.5	\$38.1	\$41.8	\$0.0

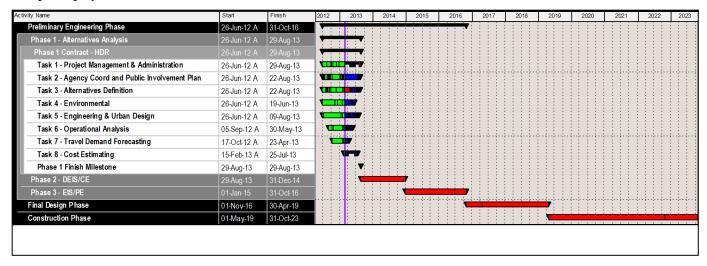
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# Link Light Rail Federal Way Transit Extension



# **Project Schedule**

Alternatives Analysis is expected to go through mid-2013. The DEIS and Conceptual Engineering will go through the end of 2014, the FEIS and Preliminary Engineering will go through late-2016, and it is anticipated that the Board will adopt the project and the FTA will issue the ROD in late 2016.



## **Sound Transit Board Actions**

Board motions and resolutions directly related to Federal Way Transit Extension is summarized in the table below for this quarter.

Motion Number	Description	Date
	None to report this period.	

# **Environmental**

• Alternatives development and screening continues.

## **Community Outreach**

- Continued tabling events in Kent, Des Moines and Federal Way.
- Staff began Council briefings.
- Had a kick-off meeting with project team for NEPA open houses in June.
- Began the process of Right of Entry authorizations and notifications to affected properties.

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# Link Light Rail Federal Way Transit Extension AA & EIS Scoping

# Phase 1 - Alternatives Analysis and EIS Scoping Overview

Sound Transit executed a professional services agreement with HDR Engineering, Inc. for Phase 1 professional services including an Alternatives analysis and EIS scoping in June 2012.

# **Key Phase 1 Activities**

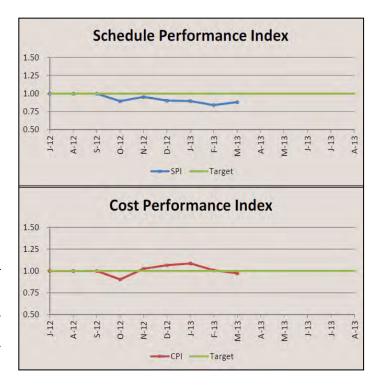
- Completed Level 1 alternatives screening report; briefed Capital Committee in March 2013.
- Started work on Level 2 alternatives screening report; will brief Capital Committee in June 2013.
- Developing Affected Environment technical memos and preparing project Purpose & Need report.
- Conducting regular coordination meetings with various stakeholders including FTA, WSDOT, the Interagency Working Group, Metro, PSRC, Highline Community College, and the cities.
- Will conduct EIS Scoping in June 2013.

## Phase 1 Schedule Performance

The Schedule Performance Index (SPI) trends at 0.88 through March, indicating work performed lags behind the original plan. Completion of the Level 2 screening report, EIS Scoping, and Board identification of the EIS alternatives will push the Phase 1 completion to September, a one month delay. Sound Transit will work with the consultant to finalize a schedule revision showing the delay.

#### Phase 1 Cost Performance

\$2.0M of the total contract amount, approximately 61%, has been spent through March. The Phase 1 percent complete reported at the end of March is 66%, resulting in an earned value of \$1.9M. The cumulative Cost Performance Index (CPI) is 0.97, which means that the expenditures are slightly higher than the earned value. Based on the current trend, final cost is expected to be within budget.



Phase I Performance	Previous Phase I Cumulative	Current Quarter	Phase I Cumulative through Mar 2013
Amount Invoiced	\$1,098,943	\$862,487	\$1,961,430
% Spent	34%	27%	61%
Earned Value	\$1,172,787	\$737,373	\$1,910,160
% Complete	41%	25%	66%
СРІ	0.90	0.85	0.88
SPI	1.07	0.85	0.97

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# Link Light Rail Tacoma Link Expansion



## Scope

In cooperation with the City of Tacoma and Pierce Transit, Sound Transit is studying the potential of expanding the Tacoma Link light rail system in the context of the City and Pierce Transit service and capital plans.

This project is updated quarterly.

The Tacoma Link Expansion Project is in Preliminary Engineering Phase.



Tacoma Link

## **Key Project Activities/Issues**

- Sound Transit executed a professional services contract with CH2M HILL in April 2012 to perform an alternatives analysis (AA) and EIS scoping.
- The AA will evaluate corridor and alignment alternatives and also evaluate BRT as a mode alternative. As a product of this work, Sound Transit may select a preferred corridor for environmental review and define a funding strategy. Design and construction delivery strategies, and a decision on whether Tacoma Link should connect with the larger regional Link light rail system, will be significant in determining expansion location, configuration, and costs.
- Sound Transit developed the scope of work with input from City of Tacoma and Pierce Transit. A technical advisory committee comprised of City, Pierce Transit and Sound Transit staff convened to provide technical feedback and guidance throughout the AA process. Sound Transit, the City of Tacoma and Pierce Transit signed a cooperative agreement term sheet.
- Until the FTA issues new guidance under MAP-21, Sound Transit will continue to follow FTA's AA guidance in order to maintain eligibility for future Small Starts grant funding.
- Sound Transit held early scoping meetings in August, including public & agency early scoping meetings/open houses. The 30-day early scoping comment period ran from August 17 September 17, 2012. Sound Transit submitted an AA initiation package to the FTA in October 2012.
- A recent request by the Tacoma City Council and the Stakeholder Roundtable group will delay by one month the Sound Transit Board's action to define the preferred corridor for environmental review.

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# Link Light Rail Tacoma Link Expansion

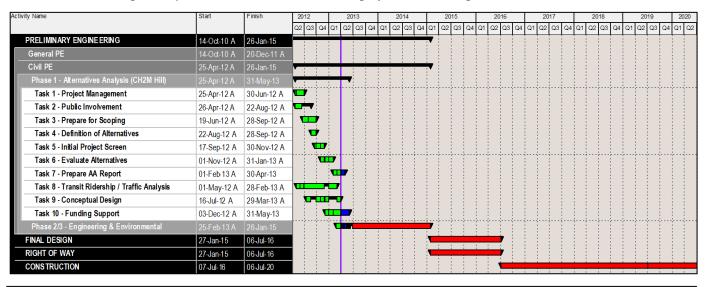
# **Project Cost Summary**

The Tacoma Link Alternatives Analysis is currently funded through the completion of the alternatives analysis, PE and Environmental Documentation. Funding included in the ST2 financial plan represents a maximum capital contribution by Sound Transit to the overall cost of expanding Tacoma Link if other public or private entities provide additional funding. Board approval for funding environmental documentation, preliminary engineering, final design and construction will be sought upon completion of the alternatives analysis, a project funding strategy and agreements with funding partners. The proposed 2013 budget includes an increase to the project lifetime budget, shown in the EFC below. (Table in millions.)

Phase	Adopted Budget	Commit- ment	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$1.0	\$0.3	\$0.4	\$0.7	\$1.0	\$0.0
Preliminary Engineering	\$4.7	\$1.0	\$0.6	\$3.7	\$4.7	\$0.0
Contingency	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total	\$5.8	\$1.3	\$0.9	\$4.4	\$5.8	\$0.0

## **Project Schedule**

The AA will be completed by the end of 1st QTR 2013. The project schedule is presented below.



# **Community Outreach**

- Held two open houses at UW Tacoma and one hosted by Tacoma Urban League.
- Held stakeholder roundtable meetings.
- Attended the Technical Advisory Committee meeting.
- Continued preparation for Open House in April.
- Participated in the City of Tacoma Meeting on a new Amtrak Station.

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# Link Light Rail Link Operations and Maintenance Satellite Facility



## Scope

Sound Transit is reviewing and evaluating current and future light rail storage and maintenance requirements to support the development, design, and construction of a future light rail operations and maintenance facility for proposed system expansion.

This project is updated quarterly.

## **Key Project Activities/Issues**

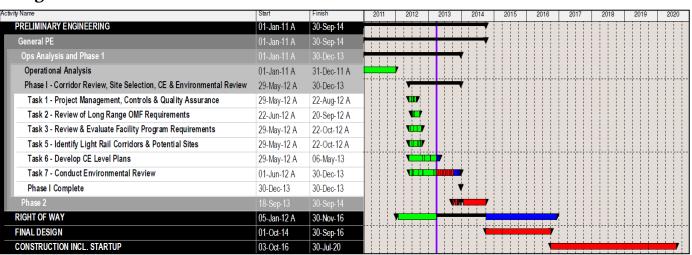
- Huitt-Zollars, Inc. continued work on their Phase 1 contract for conceptual engineering and environmental review.
- Identified long range requirements, potential corridors, and sites for the new Operations and Maintenance Satellite Facility (OMSF).
- ST Board identified DEIS alternatives in December 2012.
- Continued pursuing protective acquisition of a parcel associated with one of the potential sites.
- Preparing to publish the DEIS in 3rd QTR 2013.
- Coordinated briefing request with Community Outreach from a potentially affected property owner in Bel-Red area.

## **Program Cost**

The Link Operations and Maintenance Satellite Facility (OMSF) project is currently funded through the completion of preliminary engineering (PE) and environmental documentation. Board approval for additional funding for final design and construction will be sought upon completion of PE. Table (below) figures in millions.

Phase	Adopted Budget	Commit- ment to Date	Incurred to Date	Forecasts and Trends	Estimated Final Cost (EFC)	Budget Versus EFC
Administration	\$3.2	\$0.3	\$0.3	\$2.9	\$3.2	\$0.0
Preliminary Engineering	\$5.7	\$2.2	\$1.9	\$3.5	\$5.7	\$0.0
3 <sup>rd</sup> Party Agreements	\$0.4	\$0.0	\$0.0	\$0.4	\$0.4	\$0.0
Right of Way	\$0.1	\$0.1	\$0.1	\$0.0	\$0.1	\$0.0
Total	\$9.4	\$2.6	\$2.3	\$6.8	\$9.4	\$0.0

# **Program Schedule**



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# Link Light Rail Link Operations and Maintenance Satellite Facility

# Phase 1 - Conceptual Engineering and DEIS Overview

Sound Transit executed a professional services agreement with Huitt-Zollars, Inc. for civil engineering and architectural design services and issued NTP for Phase 1, Conceptual Engineering and DEIS, for the Link Operations and Maintenance Satellite Facility (OMSF) project in May 2012.

# **Current Key Phase 1 Activities**

- Obtained ST Board decision on DEIS alternatives in December 2012.
- Developed CE-level plans for all alternatives.
- Completed DEIS methodology templates and EIS scoping summary report.
- Continued coordination with local jurisdictions and stakeholders.
- Preparing DEIS and Design Report.

### Phase 1 Schedule Performance

The Schedule Performance Index (SPI) trends at 1.00 through March 2013, which means that work accomplished is equal to the revised baseline plan.

Change Order 001 modified the contract's Performance Management Baseline and extended the schedule through January 2014. This change reflected increased time and cost associated with the Board's direction to review more sites than anticipated.

#### Phase 1 Cost Performance

As of March 2013, \$1.8 M of the total contract amount, approximately 83%, has been spent. The Phase 1 percent complete reported through March 2013 is 74%, resulting in an earned value of \$1.6 M. The cumulative Cost Performance Index (CPI) is 0.90, which means that the expenditures are higher than the earned value. Based on the current trend, final cost is projected to be at or above budget.



Phase I Performance	Previous Period	Jan- Mar 2013	Cumulative Thru Mar 2013
Amount Invoiced	\$914,293	\$909,852	\$1,824,145
% Spent	44%	39%	83%
Earned Value	\$851,067	\$791,073	\$1,642,140
% Complete	41%	33%	74%
SPI	0.81	1.09	1.00
СРІ	0.93	0.87	0.90

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# Link Light Rail Staffing Report



# **Staffing**

**Recruiting Activity** 

During this reporting period (February 2013) the following positions were filled.

Position	Project Assignment	Planned Hire Date
Sr. Civil Engineer	Unspecified Capital Project Support	2012 Attrition
Director Civil and Structural Engineering	Design, Engineering and Construction Management	2012 Attrition
Structural Engineer	Unspecified Capital Project Support	2012 Attrition

Recruiting continued during this reporting period for the following design, engineering and construction management positions:

Position	Project Assignment	Planned Hire Date	
Chief of Staff	Capital Project Support	Deferred 2011	
Sr. Real Property Agent	Unspecified Capital Project Support	Deferred 2011	
Deputy Construction Manager	Northgate Link Extension	January 2012	
Architect	Unspecified Capital Project Support	May 2012	
Value Engineering Manager	Project Controls	November 2012	
Deputy Construction Manager	Unspecified Capital Project Support	November 2012	
Deputy Construction Manager	Unspecified Capital Project Support	November 2012	
Deputy Executive Director	Business and Construction Services	2012 Attrition	
Project Manager	Sounder Commuter Rail Program	2012 Attrition	
Project Coordinator	Northgate/University Link Extensions	2012 Attrition	
Sr. Civil Engineer	Unspecified Capital Project Support	2012 Attrition	
Sr. Risk Engineer	Project Controls	2012 Attrition	
Sr. Real Property Agent	Unspecified Capital Project Support	2012 Attrition	
Sr. Administrative Specialist	Real Property	2012 Attrition	
Director Systems Engineering and Integration	Systems Engineering and Integration	2013 Attrition	
Project Control Coordinator	Project Controls	2013 Attrition	
CAD Drafter	Unspecified Capital Project Support	February 2013	
Sr. Civil Engineer	Unspecified Capital Project Support	February 2013	
Sr. Systems Engineer	Enterprise	February 2013	
Sr. Scheduling Engineering	Project Controls	February 2013	
Community Outreach Specialist	Northgate Link Extension	February 2013	
Art Collection Coordinator	STart	February 2013	

## Project Staffing - Major Link Light Rail Programs

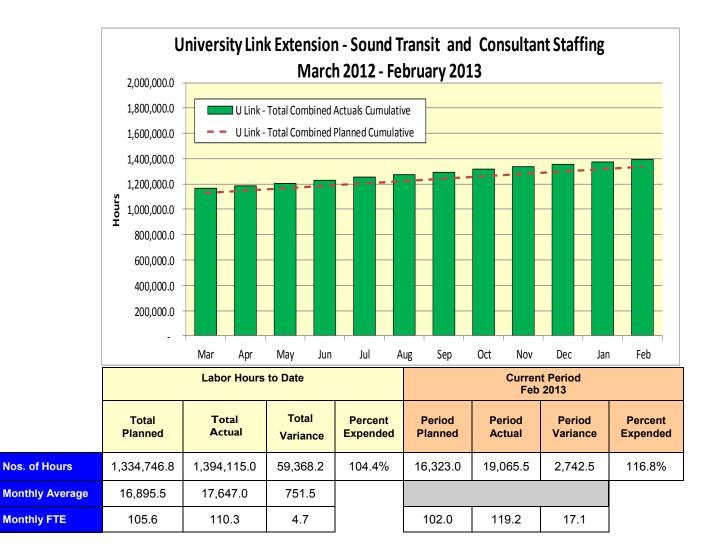
A total of 463 consultant and internal staff full time equivalents (FTE) participated in the planning, design and construction of on-going Link light rail extensions in February, an in increase of 8% (35 FTE). Cumulative staffing for all programs was 93% of plan (499 FTE). Staffing (119FTE) for the University Link Extension was 117% above plan; all other Link programs were between 80% - 95% of plan. Variance reporting for internal and consultant staffing for the planning final design and construction of the Link extensions follows.

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### Total Internal and External Staffing - University Link Extension

During this reporting period 119 consultant and internal staff was committed to the University Link Extension. Staffing for February was 14% (14.3 FTE) above the previous reporting period and 17% (17 FTE) above the baseline plan. Cumulatively, since August 2006, average project staffing continues to trend 4.4% (4.7 FTE/mo) above plan.



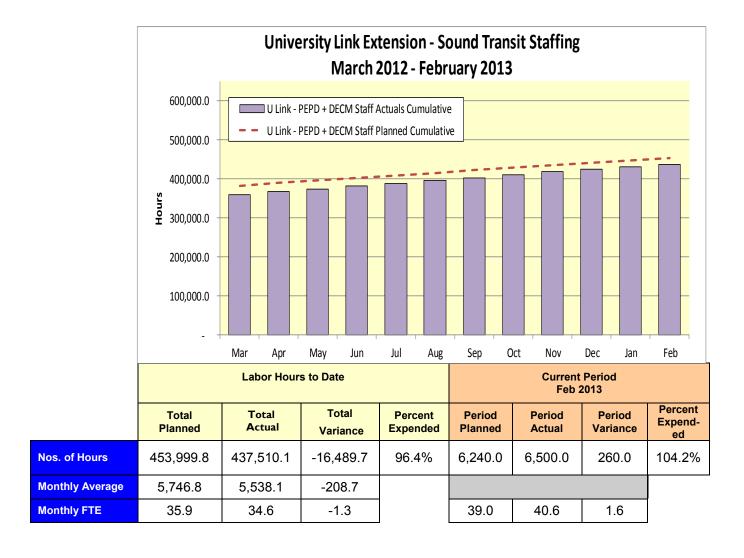
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## Internal Resource Commitments to University Link Extension

The equivalent of 40.6 full-time internal staff was committed to the University Link Extension during this reporting period. Internal staffing for February trended 5% (2 FTE) below the previous reporting period but 4% (1.6 FTE) above plan.

Cumulatively since August 2006, average internal staffing is trending 3.6% (1.3 FTE/mo) below the baseline.



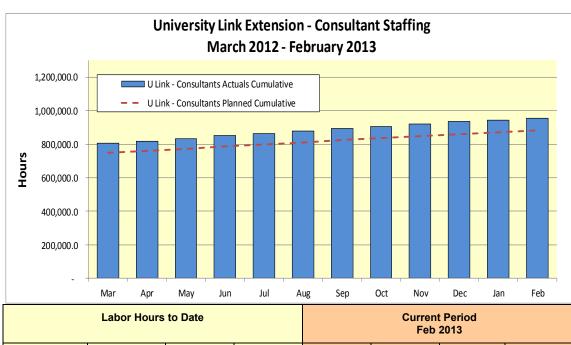
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### Consultant Resource Commitments to University Link Extension

During this reporting period, 78.5 consultant FTE were assigned to the University Link Extension; this is a 26% (16.3 FTE) increase from the previous reporting period and 25% (15.8 FTE) above plan. Consultant staffing during the previous reporting period decreased with the transition away from tunneling. However during this reporting period consultant staffing increased as additional staff were assigned to the stations finishes contract for the Capitol Hill Station and the Systems contract.

Cumulatively, since August 2006, average consultant staffing is trending 8.6% (6 FTE/mo) above plan.



	Labor Hours to Date				Feb 2013				
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended	
Nos. of Hours	880,747.0	956,604.9	75,857.9	108.6%	10,083.0	12,565.6	2,482.6	124.6%	
Monthly Average	11,148.7	12,108.9	960.2						
Monthly FTE	69.7	75.7	6.0		63.0	78.5	15.5		

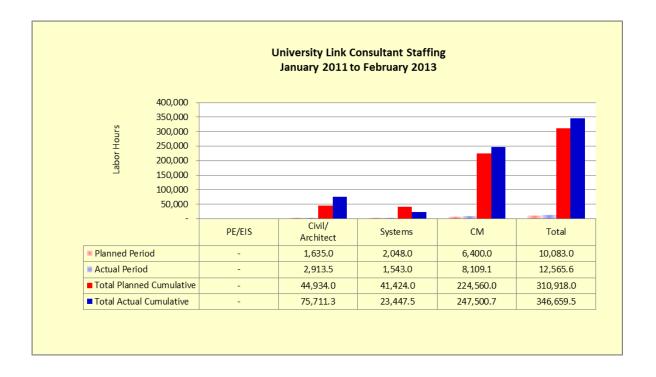
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Consultant Resource Commitments to University Link Extension, continued

Consultant utilization by discipline for the University Link Extension since January 2011 is illustrated below.

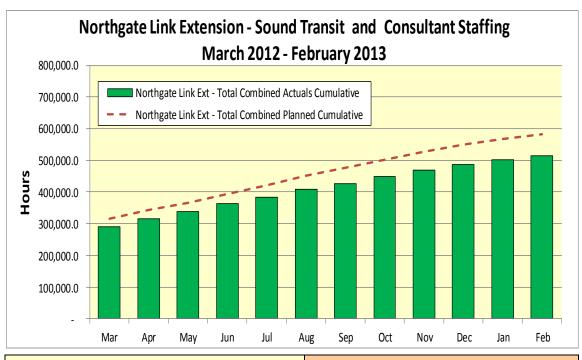
There were 18.2 consultant FTE providing civil engineering and architectural support to the University Link Extension in February. This is a decrease of 5% (0.9 FTE) from the previous reporting period and 8 FTE (78%) above planned staffing. There were 9.6 consultants FTE providing Systems support. Systems consultant staffing increased 15% (1.3 FTE) from the 8.4 FTE providing Systems support during the previous reporting period. Systems consultant staffing for the reporting period was 25% (3.2 FTE) below planned staffing of 12.8 FTE. With the turnover of the Capitol Hill Station box to the stations finishes contractor, construction management staff was 101% of plan and 46% (15.9 FTE) above the previous reporting period.



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During this reporting period, 85.4 internal and consultant staff was assigned to the Northgate Link Extension. This is a 13% (13 FTE) decrease from the previous reporting period and 15% (14.8 FTE) below planned staffing of 100.2 FTE. Appeals to municipal permitting for the demolition contracts at the Roosevelt and University District station sites delayed start of these activities. In addition, the station finishes design contracts remain suspended until the procurement of the General Contractor /Construction Management (GC/CM) contractors for station construction is completed later this year. Cumulatively staffing is trending 11% (16.5 FTE) below plan.



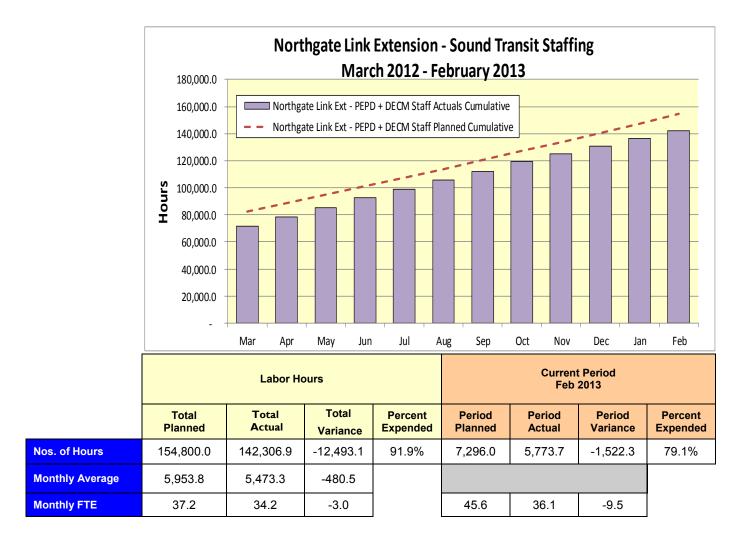
	Labor Hours				Current Period Feb 2013					
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended		
Nos. of Hours	582,900.6	514,418.6	-68,482.0	88.3%	16,029.3	13,666.7	-2,362.6	85.3%		
Monthly Average	22,419.3	19,785.3	-2,633.9							
Monthly FTE	140.1	123.7	-16.5		100.2	85.4	-14.8			

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## Internal Resource Commitments to Northgate Link Extension

During February, 36.1 internal FTE were assigned to the Northgate Link Extension. This is 3% (1 FTE) below internal staffing for the previous period and 21% (9.5 FTE) below the baseline staffing plan. Cumulatively, since January 2011, average internal staffing is trending below plan by 8.1% (3 FTE/mo).

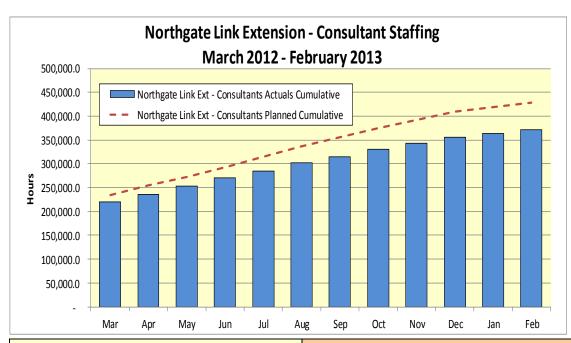


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### Consultant Resource Commitments to Northgate Link Extension

During February, 49.3 consultant FTE were assigned to the Northgate Link Extension, approximately 20% (12 FTE) below the 61 FTE consultant staff reported for the previous reporting period and 10% (5.3 FTE) below the planned consultant staffing of 54.6 FTE. Cumulatively, since January 2011, consultant utilization is trending 13.1% (13.5 FTE) below plan.

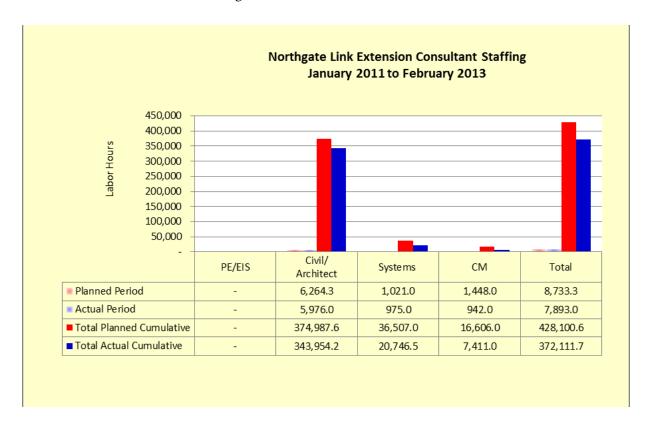


	Labor Hours				Current Period Feb 2013			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
Nos. of Hours	428,100.6	372,111.7	-55,988.9	86.9%	8,733.3	7,893.0	-840.3	90.4%
Monthly Average	16,465.4	14,312.0	-2,153.4					
Monthly FTE	102.9	89.4	-13.5		54.6	49.3	-5.3	

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Consultant Resource Commitments to Northgate Link Extension



### Consultant utilization by discipline follows:

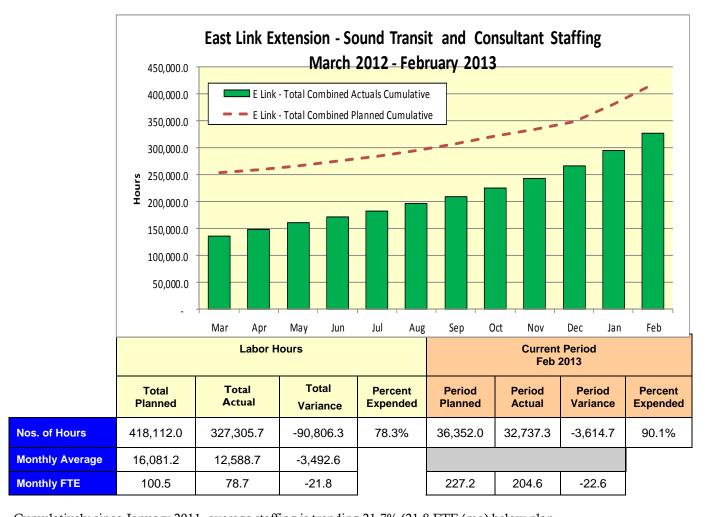
- Civil/architecture consultant utilization for February (37 FTE) decreased 19% (8.6 FTE) from the 46 FTE of the previous reporting period; civil/architecture consultant utilization for February was 1.7 FTE (4%) below baseline. Cumulatively since January 2011, average civil/architecture consultant utilization is trending 72% (65 FTE/mo) above plan.
- Systems consultant utilization in February was 5% (0.3 FTE) below the planned Systems consultant staffing of 6.3 FTE of the baseline. Systems consultant utilization increased 3% (0.2 FTE) from the previous reporting period. Cumulatively since January 2011, average Systems consultant staffing is trending 43% (5 FTE) below plan. Systems consultant staffing is projected to increase as the systems design is advanced.
- CM consultant staffing of 5.8 FTE increased 21% (1 FTE) from the previous reporting period and was 35% (3.2 FTE) below the 9 FTE forecast in the staffing plan. Permit appeals have delayed mobilization of the demolition contractor to the University District station location and the advanced utility relocation contractors. Appeals are expected to be resolved by April. Cumulatively, since January 2011, average CM consultant staffing is trending 1.8 FTE/mo below plan.

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#### **East Link Extension Staffing**

Staffing levels assigned to the East Link Extension continued to increase in February with 204 internal and consultant staff was assigned to the project. This is approximately 19% (32.7 FTE) above the previous reporting period. However, project staffing was 21.7% (21.8 FTE) below the staffing plan. In developing the staffing plan it was assumed that the decision on the cost savings alternatives in Bellevue would have occurred and design on these alternatives progressed. This decision is now expected in the second quarter 2013.



Cumulatively since January 2011, average staffing is trending 21.7% ( $21.8\ FTE/mo$ ) below plan.

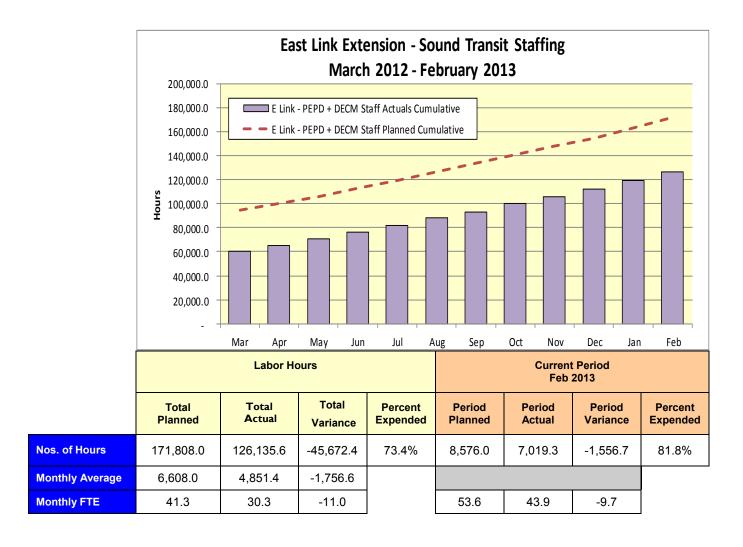
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## **East Link Extension Staffing**

#### Internal Resource Commitments to East Link Extension

During February, internal staffing for the East Link Extension (43.9 FTE) was 2% (0.9 FTE) below the previous reporting period and 18% (9.7 FTE) below plan. Cumulatively, since January 2011, average internal staffing is trending 26.6% (11 FTE) below plan.



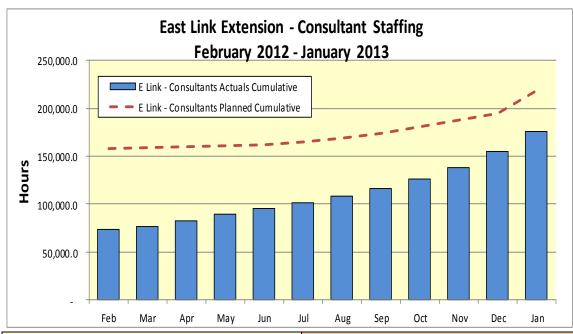
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## **East Link Extension Staffing**

#### Consultant Resource Commitments to East Link Extension

During February, 161 consultant FTE were assigned to the East Link Extension, 33.6 FTE (26%) above staffing for the previous reporting period and 9.7 FTE (18%) below the 2013 staffing baseline. Cumulatively since January 2011, average consultant staffing is trending 18.3% (10.8 FTE/mo) below plan.



	Labor Hours				Current Period Feb 2013			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
Nos. of Hours	246,304.0	201,170.1	-45,134.0	81.7%	27,776.0	25,718.0	-2,058.0	92.6%
Monthly Average	9,473.2	7,737.3	-1,735.9					
Monthly FTE	59.2	48.4	-10.8		173.6	160.7	-12.9	

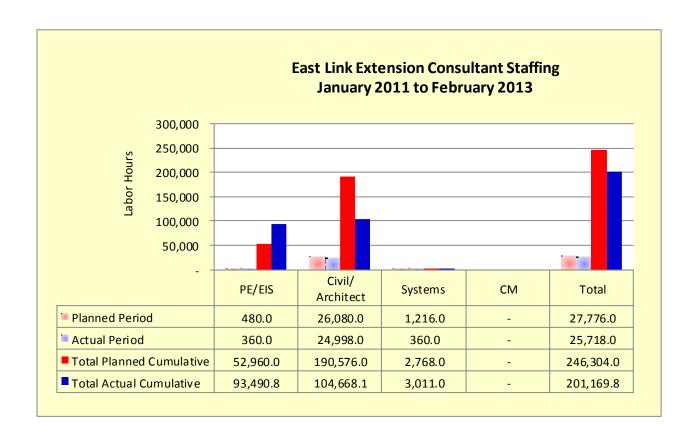
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### **East Link Staffing**

#### Consultant Resource Commitments to East Link, continued

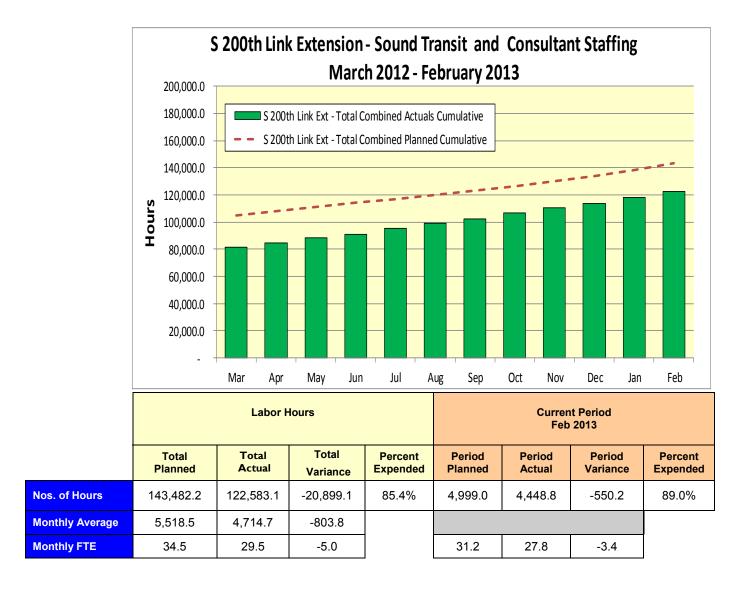
Consultant utilization by discipline since January 2011 is reflected below. Civil engineering consultant staffing in February increased significantly (34 FTE) with the progress on civil design and the Track Bridge and D-2 Roadway designs.



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During this reporting period, 27.8 internal and consultant staff was assigned to the S. 200<sup>th</sup> Link Extension, an increase of 3% (0.9 FTE) from the previous reporting period and 11% (3.4 FTE) below the 31.2 FTE reflected in the staffing plan.



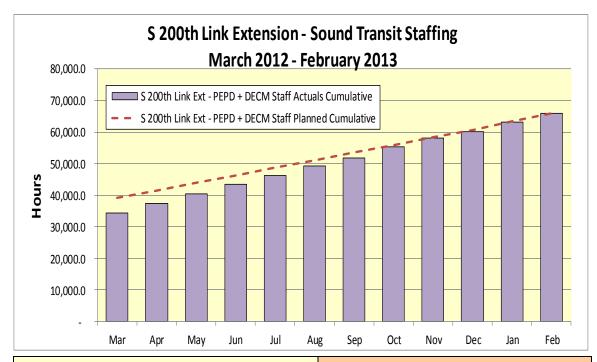
Since January 2011, average internal and consultant staffing has trended 24.6% (5 FTE/mo) below plan.

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#### Internal Resource Commitments South Link to S.200th Link Extension

During February, 17 internal FTE were assigned to the S. 200<sup>th</sup> Link Extension, 2% (0.4 FTE) above the baseline and 2.2 FTE (12%) below the previous reporting period. Activity continues on contract packaging for the station parking structure, surface parking and traffic impact mitigation measures. Sound Transit intends to complete a structured parking facility in the vicinity of the station through a design/build delivery strategy and is seeking approval from the Washington State Department of Enterprise Service Capital Projects Advisory Review Board (CPARB) to proceed with this strategy. Traffic impact mitigation and surface parking will be completed through a traditional design-bid-build process.



	Labor Hours				Current Period Feb 2013			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
Nos. of Hours	65,971.2	65,872.8	-98.4	99.9%	2,656.0	2,720.8	64.8	102.4%
Monthly Average	2,537.4	2,533.6	-3.8					
Monthly FTE	15.9	15.8	0.0		16.6	17.0	0.4	

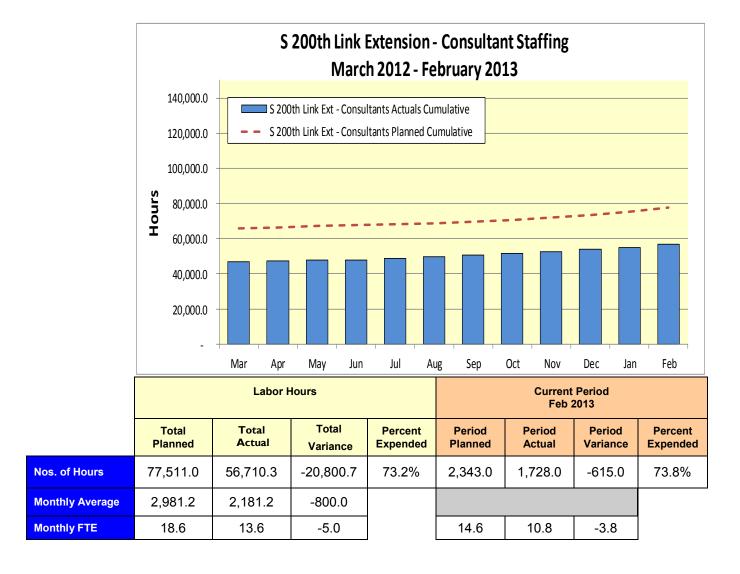
Cumulatively, since January 2011, average internal staffing has trended consistently with the baseline.

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#### Consultant Resource Commitments to S. 200th Link Extension

During February, 10.8 consultant FTE were assigned to the S. 200<sup>th</sup> Link Extension, 41% (2.1 FTE) above consultant staffing for the previous reporting period and 26% (3.8 FTE) below plan. Consultant staffing continued for preliminary engineering for the parking structure and the roadway improvements in the vicinity of the S. 200<sup>th</sup> Station and management oversight of the design/build activities. Cumulatively, since January 2011, average consultant staffing is trending 26.8% (5 FTE) below plan.

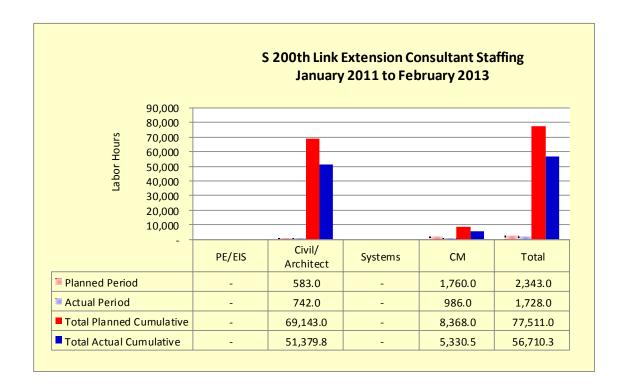


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### Consultant Resource Commitments to S. 200th Link Extension

Design/build project management consultants (6.2 FTE) made up nearly 60% of the consultant staffing for this reporting period with the additional consultant staff (4.6 FTE) engaged in design efforts for the parking structure, surface parking and traffic mitigation measures. There was no Systems consultant level of effort during this reporting period; systems consulting has been incorporated into the station and guideway design/build contract and will not be tracked separately from that contract.



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## **Lynnwood Link Staffing**

During February, 26 FTE, approximately 67% of plan, were assigned to the Lynnwood Link Extension. Internal staffing of 10.1 FTE was approximately 20% (2.6 FTE) below plan. Consultant staffing of 15.9 FTE was 61% of plan; all consultant staffing were engaged in preliminary engineering.

	Labor Hours				Current Period Feb 2013			
	Total Planned	Total Actual	Total Variance	Percent Expended	Period Planned	Period Actual	Period Variance	Percent Expended
Nos. of Hours	12,384.0	8,168.1	-4,215.9	66.0%	6,192.0	4,158.4	-2,033.6	67.2%
Monthly Average	6,192.0	4,084.1	-2,107.9					
Monthly FTE	38.7	25.5	-13.2		38.7	26.0	-12.7	

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# Link Light Rail Acronyms



#### **ACRONYMS**

AA Alternative Analysis

APE Area of Potential Impact

BCE Baseline Cost Estimate

BCWS Budgeted Cost of Work

BIM Building Information Modeling

BNSF Burlington Northern Santa Fe Railway

CCB Change Control Board
CDF Controlled Density Fill
CHS Capitol Hill Station

CM Construction Management
CMU Concrete Masonry Unit

CO Change Order

CPI Cost Performance Index
CPM Critical Path Method

DAHP Department of Archaeology & History Preservation

DART Days Away, Restricted or Modified

D/B Design Build

DECM Design, Engineering and Construction Management

DEIS Draft Environmental Impact Statement

DPD Seattle Department of Planning and Development

DSC Differing Site Conditions

DSDC Design Support During Construction
DSTT Downtown Seattle Transit Tunnel

EFC Estimated Final Cost

EMI Electro Magnetic Interference

FD Final Design

FHWA Federal Highway Administration

FSEIS Final Supplemental Environmental Impact Statement

FFGA Full Funding Grant Agreement
FTA Federal Transit Administration

FTE Full Time Employee

GC/CM General Contractor / Construction Management

IWP Industrial Waste Permit

JA Jacobs Associate

JARPA Joint Aquatic Resource Permit Application

JCM JCM U-Link Joint Venture (Contract U230)

KCM King County Metro

LNTP Limited Notice to Proceed

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# Link Light Rail Acronyms

ACRONYMS, continued

LRT Light Rail Transit
LRV Light Rail Vehicle

LTK Engineering Services

MACC Maximum Allowable Construction Cost

MDA Major Discharge Authorization
MLK Martin Luther King, Jr. Way
MOA Memorandum of Agreement
MOS Minimum Operable Segment
MOU Memorandum of Understanding

MPPCV Major Public Project Construction Variance

MTP Montlake Triangle Project

MUP Master Use Permit

NB Northbound

NCTP North Corridor Transit Partners
NEPA National Environmental Policy Act

NOAA National Oceanic and Atmospheric Administration

NTP Northlink Transit Partners
OCS Overhead Catenary System

OMF Operations and Maintenance Facility

OMSF Operations and Maintenance Satellite Facility

PB PB Americas Inc.

PE Preliminary Engineering
PEP Project Execution Plan

PEPD Planning, Environment and Project Development

PMOC Project Management Oversight Consultant

PSST Pine Street Stub Tunnel
QA Quality Assurance
QC Quality Control

QTR Quarter

RE Resident Engineer
RFC Request for Change
RFI Request for Information
RFP Request for Proposal
RFQ Request for Qualifications
RIR Recordable Injury Rates

ROD Record of Decision
ROW Right of Way

RVP Rainier Vista Plan

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# Link Light Rail Acronyms



#### ACRONYMS, continued

SB Southbound

SCADA Supervisory Central and Data Acquisition

SCC Standard Cost Categories
SCL Seattle City Light

SDEIS Supplemental Draft Environmental Impact Statement

SEPA State Environmental Policy Act
SIP Street Improvement Permitting
SPI Schedule Performance Index

SR State Route
ST Sound Transit

START Seattle Tunnel and Rail Team

SWI Stacy & Witbeck, Inc.

TBM Tunnel Boring Machine

TE Traction Electrification

TFK Traylor Frontier Kemper Joint Venture

TOD Transit Oriented Development
TVM Ticket Vending Machine
UAC Unallocated Contingency
U-Link University Link project

USFWS U.S. Fish and Wildlife Service UW University Of Washington

UWS University of Washington Station

VE Value Engineering

VECP Value Engineering Cost Proposal WBS Work Breakdown Structure

WSDOT Washington Department of Transportation

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